

WORK SCHEDULE STRESS AND WELLNESS IN FEMALE
AIR CABIN ATTENDANTS

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DECLARATION

I declare that this dissertation is my own, unaided work. It is being submitted in partial fulfilment of the requirements for the Degree of Master of Arts in Industrial and Organisational Psychology. It has not been submitted before for a degree or examination in any other university.

Signed by candidate

P. PORTER

OCTOBER, 1988

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DEDICATION

To my parents, Roddy and Ann Janssens, as evidence of the culmination of their lifelong efforts and support, my husband, Mark, for his confidence and support and my unborn child for not placing too many demands on me during this time.

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LIST OF ABBREVIATIONS

CA Cabin Attendant

QWL Quality of Work Life

SAA South African Airways



ABSTRACT

The research investigated Work Schedule Stress experienced by female air cabin attendants (CAs) employed by South African Airways and its relationship to health variables in CAs. Specifically, it was hypothesised that Work Schedule Stress is an important stressor for CAs and is inversely related to health variables. Furthermore, the variables of Potency, Trait Anxiety, Trait Anger, and Social Support were proposed to moderate the relationship between Work Schedule Stress and the health variables. Data were collected from a sample of 108 domestic crew and 43 international crew. The data collection was conducted in two phases, via interviews and self report inventories. The interview data were used in a qualitative study but were also content-analysed in terms of a number of dimensions; the latter were included with the quantitative data obtained from the questionnaire. The qualitative analysis, based on the grounded theory approach, formed the backbone of the research. The quantitative data were subjected to correlational analysis, supplemented by subgroup analysis to assess moderator effects. Work Schedule Stress was demonstrated to represent a major stress for CAs with consequent adverse effects on health. The results did not provide support for the moderating effects. Conclusions were drawn, recommendations made to the SAA and CAs themselves of means to enhance wellness, and suggestions for future research proposed.

CHAPTER 1

INTRODUCTION

"There is a time for some things,
and a time for all things,
a time for great things,
and a time for small things."

- CERVANTES.

The above quotation, discovered in the opening paragraphs of Harriman's (1982) writings, encapsulates the subject matter of the present research ... "it's a matter of time". Time as a commodity and the allocation thereof forms a central pivot around which much of modern society revolves. In a world characterised by constant change, advancement and development, with consequent rising costs and values, we are urged to utilise all resources - including time, materials, space, technology and people - optimally in our striving to improve our lot and ultimately to enhance society's quality of life.

The present study, however, deals with the importance of time in the context of work and, more particularly, in the context of the quality of work(-ing) life (QWL).

The concept of quality of life and, more specifically, quality of working life, is enjoying increasing focus and

attention in human resources management and industrial/organisational psychology. In a society obsessed with improvement and quality it follows that such should extend to life in general as an important value to be upheld. Given the fact that much of an individual's lifespan is spent working within some form of an organisation, "the quality of work life affects the individual's total life situation" (Ronen, 1981, p.57). The current QWL movement includes various initiatives in its strengthening stand against dehumanised, industrialised approaches and espousment of increased humanistic values. As Shamir and Salomon put it: "the phrase quality of work life refers to the individual's job-related well-being and the extent to which his or her work experience is rewarding, fulfilling and devoid of stress and other negative personal consequences" (1985, p.455)

In discussing QWL and the various facets thereof and referring to Davis and Cherns' (1975) writings in the field, Ronen pointed out that, "factors which influence the worker's quality of work life include the task, the physical work environment, the social environment within the work situation, the administrative system of the company, and the relationship between life on and off the job" (1981, p.57).

Work Schedules : Introductory Comments

Whilst recognising the necessity of, and operating within a wholistic perspective or framework, the specific area of focus of the current research is on that aspect of work which plays a major role in shaping the course of most of our other life activities, namely the scheduling of work periods. In particular, the research is concerned with investigating the various facets and factors involved in working schedules which deviate from the 'norm' of working solely daytime hours, i.e. commencing early morning until some time mid to late afternoon - the time parameters into which the majority of society's working lives fit. The working hours of the air cabin attendant (CA) - the occupation investigated in this study - indeed deviate from such norms and in fact fall into the category of shiftwork when considering that "shiftwork is present whenever employees start work at times other than 7 to 9 a.m." (Coffey, 1984).

Of late, increasing attention has been paid to the issue of shiftwork, particularly in the context of an ever-increasing concern with quality of life related issues (Davis & Cherns, 1975) and the fact that an ever-increasing proportion of the population is being required to partake in shiftwork for whatever reason. Authors, such as Holt (1982), Mets (1986); and Monk and Tepas (1985), quote

statistics of up to 25% of the population being involved in shiftwork in the USA and Europe. Although such statistics are not available for the South African situation, the proportion of individuals involved in some form of shiftwork here is believed by the author to be of at least equivalent proportions to the international experience. Rutenfranz, Colquhoun, Knauth and Ghata (1977) pointed out three major justifications for the increasing utilisation of shiftwork in the face of the current technical and technological revolution and consequent increasing society demands. These authors gave three reasons for shiftwork: "(a) Social (provision of round the clock services, e.g. medical care, transportation facilities, and security); (b) technological (continuous process operations, e.g. steel production, petrochemical refineries) and (c) economic (optimal use of invested capital, e.g. costly machinery)" (Rutenfranz et al., 1977, p165).

Whilst acknowledging the validity of such justifications and recognising that in essence shiftwork is geared toward enhancing the quality of life of society in general, it is crucial to retain in perspective the need to protect the quality of life of the individual employees. It is necessary to ensure that the concern for the wellbeing of society does not override concern for the individual upon whom the demands of working unusual or shift-related hours is placed. To this end, Rutenfranz et al. pointed out that

"there is a need to create a balance between the needs of society in general and those of the individual worker in particular" (1977, p.165).

In addressing the issue of shiftwork, and discussing people who work outside of "normal hours", Wallace pointed out that "people who work shifts face a lot of problems that the rest of the world do not know about" (1985, p.15). Greenwood gives emphasis to such in stating that "a deficit in the quality of life for shiftworkers has been clearly demonstrated" (1983, p.14). In accepting that such problem areas do exist in relation to shiftwork, it is important to retain the perspective that the actual problems experienced and other effects of shiftwork vary according to contextual factors, such as the nature of the job, the community and individuals concerned, the industry in question and the actual hours worked. Whilst no overriding generalisations are possible, it is necessary for all concerned to retain awareness of the potential pitfalls of "alternative work schedules" (Cohen & Gadon, 1978) and as such "there is a need to investigate the nature of the deficit (in quality of life) in the various subgroups so that the necessary action to alleviate the problems can be properly planned for maximal effectiveness" (Greenwood, 1983, p.14).

Introduction to Air Cabin Attendants: A Justification

The present research on air cabin attendants was done against a background of concerns such as those expressed in the previous section. Specifically, in the face of growing societal demands, it is necessary to provide round the clock services, such as the South African Airways (SAA) provides. This in turn imposes the demand upon aircrew and flight attendants to work unusual hours with varied work schedules (Hancock, 1986). Little is, however, known with regard to the impact of such work schedules on the CAs' health or wellness, performance and lives in general. Such information is of paramount importance both from the humane perspective and quality of life considerations, as well as from the practical perspective, of the nature of the CA's job. "Flight attendants serve a critical role in airline operations and are at the frontline of passenger safety under a variety of circumstances, including inflight illnesses, decompressions and survivable incidents" (Mohler, 1985, p.2). For this reason it is crucial that CAs are maintained in an optimal state of physical and mental wellbeing.

The research is thus posed to have far-reaching relevance, firstly, to the SAA, as the organisation providing these services, as a necessary and healthy process of self-examination; secondly, to the CAs, for the same

reasons; and thirdly, to the public and society in general, as a means of evaluating the quality of the service received and its implications for both their own quality of life as receivers, as well as that of the providers of the service.

Overview of Present Study

On the basis of personnel reports, theoretical insights and empirical research, work schedules, and specifically shiftwork, have been posed as a common occupational stressor with diverse physical, psychological and social risks and consequences for those concerned (e.g. Cooper, 1985; Kogi, 1985; Nilsson, 1978; Rutenfranz et al., 1977). Given that any form of stress experience, be it organisational, occupational or otherwise, is a complex phenomenon with diverse potential consequences, the objective of the current research was primarily exploratory. It was aimed at investigating the phenomenon of work schedule stress as experienced by "internal" or "domestic" air cabin attendants employed by the SAA. In the first place, an attempt was made to investigate the nature of work schedule stress, and its various facets as experienced by the CAs. Secondly, it was attempted to explore the relationship between such work schedule stress and various aspects of the health of the CA. In addition to investigating stressor-health relationships, the third objective was to study variables

which conceivably moderate relationships between these two classes of variable.

The present research was conducted at the SAA in conjunction with Gail Tilley (1988), who was also involved in investigating various other stress related facets of the work experience of female air cabin attendants. The research was carried out via unstructured interviews with domestic and international cabin attendants. Subsequent to the interview, participants completed a self-descriptive questionnaire which investigated various facets of the job, as well as health-related and personality trait variables. The interview data were used in a qualitative study but were also content-analysed in terms of a number of dimensions; the latter were included with the quantitative data obtained from the questionnaire.

The next chapter will present a review of relevant literature. Specific focus will be placed on shiftwork as an occupational stressor. The research problem will then be outlined and discussed. Next, both the 'qualitative' and 'quantitative' results will be presented and discussed. Lastly, the research will be critically assessed and conclusion drawn; certain recommendations will also be made and suggestions for future research will be proposed.

CHAPTER 2

LITERATURE REVIEW

THE CONCEPT OF STRESS

A plethora of whisperings, writings and research exist concerning the phenomenon of stress, its various manifestations, causes, dimensions and consequences. Any attempt at reviewing even a portion of the available knowledge and information in depth would be sizeable and certainly beyond the bounds of this dissertation. The present discussion of stress will be limited to the proposal of definitions, the presentation of a model of stress and a cursory insight into occupational stress.

Selye stated in his opening sentences regarding the present status of the stress concept that "nowadays everyone seems to be talking about stress" (1982, p.7). In fact as early as 1979, Albrecht characterised stress as the 20th Century disease. In essence, there appears to be no doubt about the fact that 'stress is with us', a fact of life in our society. To date, however, there is no consensus with regard to a definition of the concept. As Maxwell and Roxborough pointed out, "stress is an emotive word and means many different things to different people" (1984, p.625).

For the purposes of this research, Lazarus' definition of the concept seems to be the most useful and appropriate:

Stress refers then to a very broad class of problems differentiated from other problem areas because it deals with any demands which tax the system, whatever it is, a physiological system, a social system, or a psychological system, and the response of that system (Lazarus, 1971, p.54).

This description emphasises the relationship between the environment and the reacting individual (Marshall & Cooper, 1979).

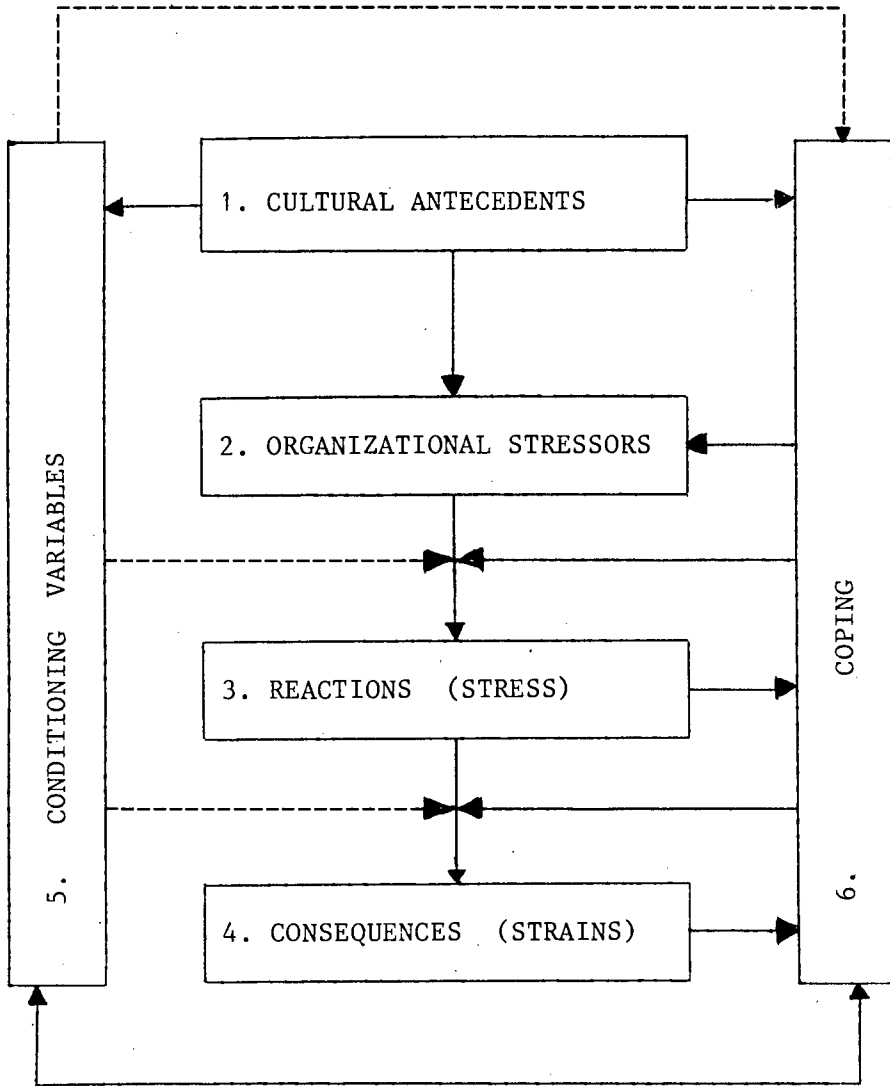
In further finetuning our understanding of the concept, it is necessary to point out that not all stress is bad, nor does stress always have adverse effects. It is necessary to distinguish between 'good' and 'bad' stress, or more specifically, between eustress and dystress (Strumpfer, 1983, 1985). Strümpfer pointed out that: "Dystress refers to unpleasant, harmful, even disabling demands There is, however, also a pleasant, facilitating, even enabling kind of demand to which the person reacts as eustress (Greek eu- = 'good')" (Strümpfer, 1983, pp. 5 -6).

Stress, and the experience thereof is thus neither inherently good nor bad and the experience of situations as either eu- or dy-stressful will be consequent to a multitude of components involved in the interaction. Everyone lives

with a certain amount of stress (Cornellier, 1984), as Burke, Weir and Duncan have pointed out in stating that "in the course of daily living, everyone encounters problems and difficulties which are stress producing," (1976, p.370). Antonovsky has written about the omnipresence of stressors and concluded that "the human condition is stressful" (1979, p.9). Strümpfer pointed out that in fact, "some degree of stress is necessary to keep people active and fully functioning" (1983, p.6). It is obvious that stress and the experience thereof must be conceptualised within a wholistic, systems framework. To this end, the model outlined in Figure 1, developed by Strümpfer (1983), which illustrates the components of organisational stress and their interactions will be used in the remainder of this report as a framework within which to conceptualise and discuss the occupational stress of work schedules.

Without going into any detailed explanations of the model, it is important to point out that the labelled rectangles, indicate classes of components of organisational stress. The arrows indicate interactions between the components although they do not necessarily denote causality; the solid arrows indicate direct influences of one component leading to another, and broken-line arrows indicate processes which condition, i.e. strengthen or weaken interactions (Strümpfer, 1983, 1985).

FIGURE 1 : MODEL OF COMPONENTS OF ORGANISATIONAL
STRESS AND THEIR INTERACTIONS



SOURCE: Strümpfer, 1983, p.7.

The concept of occupational or organisational stress deserves brief expansion. Green pointed out that "stress is an intrinsic factor in many jobs," (1985, p.638). In the same vein Hendrix (1985) remarked that research has suggested that the work environment is a major source of psychological stress and subsequent ill health. Holt (1982) produced further food for thought on the topic in asserting that, "work has always been considered at best a mixed blessing, if not an absolute curse" (p.419). Furthermore, in discussing the field of occupational stress, he stated that "some aspects of many kinds of work have had effects on most people under certain circumstances The field of occupational stress then becomes the study of those aspects of work that either have or threaten to have bad effects" (Holt, 1982, p.421). Those aspects of work constituting "negative environmental factors or stressors" (Cooper and Marshall, 1976) to which we are referring when discussing occupational stress, are thus obviously diverse. Examples that have been suggested are work overload, role conflict or role ambiguity, poor working conditions, and shiftwork (Cooper & Marshall, 1976; Hendrix, 1985). The experience of work as stressful or otherwise is a consequence of a multitude of factors interacting, including the individual's inherent characteristics and behaviours. Furthermore, the consequences of occupational stress have been documented as diverse by numerous authors (e.g. Cooper

& Marshall, 1976; Dooley, Rook & Catalano, 1987; Gupta & Beehr, 1979; Holt, 1982, to mention but a few).

Occupational stress is thus emphasised to be an extremely complex matter, the potential and reported consequences of which will be discussed at a later stage. The potential seriousness and crucial importance of the phenomenon of occupational stress cannot, however, be overemphasised, a statement given credence and supported by Burke, Weir and Duncan stating:

Several researchers have pointed out that the sources of greatest stress for any individual will be those areas of life in which he most heavily invests himself. Such an obvious major investment is an individual's work situation - a situation that places heavy demands on his time and energy and from which he derives some part of his self image and identity. It can be expected, therefore, that an individual's work situation will be a fertile place for the appearance of stressful experiences and how he copes with those experiences may affect not only his work efficiency but his effectiveness in other aspects of his life as well. (1976, p.370)

SHIFTWORK AS AN OCCUPATIONAL STRESSOR

Shiftwork

An extensive amount of research has been conducted and published in the field of shiftwork. Indeed, there appears to be an evergrowing interest in the phenomenon, a feature believed possibly to be due to the fact that there are "vast cohorts of people currently working abnormal hours" (Monk & Tepas, 1985, p.65). An adequate review of the abundant literature falls outside the scope of this dissertation. A number of excellent comprehensive reviews have been published, e.g. Kogi (1985) and Monk and Tepas (1985).

In order to provide structure to the brief review of work schedule or shiftwork stress below, an overview of some important concepts will be provided, following which some of the literature will be reviewed within the framework of Strumpfer's (1983) model.

The term "shiftwork" as utilised here refers to "the scheduling of work outside of the 'standard' work period of (approximately) 8.00 a.m. to 5.00 p.m." (Webb, 1979, p.24), a definition which ties in with that of Coffey (1984) referred to earlier. The term thus refers to any form of non-standard hours of work or unusual work-rest schedules (Kogi, 1985). Mention has already been made of the fact that

there appears to be an increasing trend toward work schedules involving shiftwork. Webb even considered shiftwork as "becoming pandemic in industrial society" (1979, p.24) and he discussed plausible reasons for these developments. The desire for time optimisation and subsequent widespread use of shiftwork scheduling was concluded by Rose to have emerged from "new cultural values at work" (1981, p.3757).

Shiftwork refers to an amazing variety of work-hour systems (Tepas, 1979). The literature reveals that the schedules worked vary extensively according to dimensions such as "permanent" as opposed to "rotating" shifts; the time periods or rate of rotations (e.g. daily, weekly, monthly or less frequently); lengths of shifts; whether they are continuous (i.e. involve a 7 day week) or discontinuous (five-day week); starting and finishing times; and rotating directions (Hancock, 1986; Holt, 1982; Rutenfranz et al., 1977; Singer, 1985A; Singer, 1985B; Tepas, 1979 etc.). The combinations are endless and not to be explored within the confines of this research. Holt (1982) expressed concern that due to the diversity in shift systems and the communities within which they occur, it is difficult to compare findings. However, as Kogi (1985) pointed out, whilst there is a diversity of shift systems, there are many similarities between the problems encountered by individuals as a result of, and in adjusting to, unusual work-rest

schedules. He further asserted that, "given the diversity of shiftsystems, some have more impact than others ... for example those which deviate considerably from normal daywork in terms of the frequency and density of nightshifts" (Kogi, 1985, p.172).

In the context of the present research, it is important to note that the work schedules or shifts worked by the CAs are probably fairly unique to the airline itself, hence the efforts of the researcher to investigate their specific impact. Research findings should, however, be interpreted against the context in which they were gained.

Circadian Systems

An issue enjoying a great deal of attention in the literature is the circadian system and its reaction to various work schedule systems. Evolution has provided man with a circadian temporal structure (Rutenfranz et al., 1977), an internal (endogenous) biological time-keeping system which involves cycles and rhythms of approximately 24 hours in length, such as the pattern of sleeping and waking (Monk & Tepas, 1985). The system is largely influenced by the operations of various "synchronizers" (Rutenfranz et al., 1977), "Zeitgebers" (Monk & Tepas, 1985) or time cues. These may be physical, e.g. perception of sunrise/sunset, awareness of clock time; or social e.g.

the activity patterns of the society in which one lives. As Monk and Tepas pointed out, "under a normal day-working routine, the Zeitgeber simply makes the minor corrections needed to keep the circadian system running at exactly 24 hours" (1985, p.67).

Shiftwork conditions have, however, been shown to disturb this temporal structure (Rutenfranz et al., 1977). In fact they pose a far more complex situation due to the fact that, as the biological circadian system is endogenous and self-sustaining, it has a certain resistance to change; it cannot be reset instantaneously as one would a clock. The shiftworker is thus frequently subjected to conflicting Zeitgeber information (Monk & Tepas, 1985). The extent of this effect of disrupting of circadian rhythms obviously also varies in relation to factors relating to the individual, the context and of course the shift pattern itself and whether it includes nightwork. Referring to the effect of disruption of the rhythms, Rutenfranz et al. pointed out that, "Shiftwork produces a situation in which a phase shifting of waking and sleeping times takes place without a corresponding shifting in the phasing of the dominant social synchronisers" (1977, p.173).

Hancock (1986) has pointed out that disruption of these circadian rhythms is stressful. The issue with regard to whether the rhythms can adapt, for example to be in

synchrony with night work, is controversial. On the basis of research evidence, Singer expressed the opinion that "proper adjustment of the body clock never occurs. There is only distortion of rhythms, never adaptation" (1985A, p.7).

COMPONENTS OF SHIFTWORK STRESS

The various components of shiftwork stress will be discussed below in terms of Strümpfer's (1983, 1985) model presented earlier in this chapter. Most extensive attention will be given to various consequences of stress and to conditioning variables which could conceivably buffer the stressor-health relationship.

Cultural Antecedents

The cultural antecedents, i.e. the systems and situations (Strümpfer, 1985) within which we exist will have a definite and strong influence on our experiences in life. Humans are a product of their life which is an accumulation of a multitude of factors, events, organisations and people which operate to shape what Beck et al. have termed our "operating assumptions, value systems and world-views" (1982, p.22). Whilst not much research has been conducted to date on the influence of 'cultural antecedents' on the experience of shift work as an occupational stress, authors such as Dunham (1977), Rowland (1982) and Zedeck, Jackson and

Summers (1983) have acknowledged its role in influencing the "shiftwork experience". To this end, Rowland has coined the phrase "cultural community scenario" and he pointed out that "it is against this cultural community scenario that shiftwork in its family and social context must be understood" (1982, p.1).

Rowland (1982) expanded the concept in asserting that work dictates and moderates very significant aspects of time-related behaviours. In fact, the community orientates its activities, such as recreation, sport, transport etc., about the hours of work, which for the majority is oriented to daytime work. Shiftworkers are subsequently led to feel abnormal or "out of phase with the normal community" (Rowland, 1982, p.2) and in certain instances they experience isolation. Dunham (1977) strongly asserted the notion that shiftwork schedule problems are created by the workers' noncongruent role in society in relationship to the time schedule of the majority of the community. Rowland pointed out another factor in this context, viz. that "communities with a large population of shiftworkers are able to develop an 'occupational community' which becomes a substitute for the broader community" (1982, p.2).

Whilst it is obvious that further exploration of this component may be required, it is important to note that it

should be taken into consideration when discussing shiftwork-related stress.

Organisational Stressors

As discussed earlier in this chapter, shiftwork is the prime organisational stressor in this research. However, it is obvious that its impact is influenced and perhaps conditioned by other organisational variables and stressors. Some research has been done in this field and referred to rather globally by authors such as Rutenfranz et al. (1977) and Zedeck et al. (1983). Although the evidence is inconclusive it is necessary to take such contextual factors into account when investigating shiftwork-related issues.

Reactions

The reactions to shiftwork are extremely diverse and related to a number of factors as shall be explored. It has been posed earlier that work schedules have diverse effects, the majority of which suggest a deficit of QWL for the individuals concerned, in the diverse levels of 'discomfort' it may lead to. Monk and Tepas pointed out that such discomfort "can range from slight feelings of malaise and social inconvenience to major medical problems and domestic distress" (1985, p.66). Webb had stronger

sentiments regarding the implications of the increasing use of shiftwork which he expressed in stating, "I view it as another contribution of modern society to mankind's further impoverishment" (1979, p.24). On a slightly more moderate level, Monk and Tepas (1985, p.88) pointed out that "it is clear that shiftwork represents a major source of 'blue collar stress'". In the context of discussing unnatural activities and the potential harm arising from the inability of the human being to adjust to them, these authors stated that "in a similar way, shiftwork is an unnatural activity which, under some circumstances, can lead to problems and eventually harm" (Monk and Tepas, 1985, p.65).

Consequences

Mention has already been made of the fact that the potential consequences of shiftwork are extensive and varied, as emphasised by Webb (1979): "The symptoms range from detailed and discreet physiological changes to subtle psychological states of malaise and errors" (1979, p.24). The following discussion will concentrate on some of the major consequences as represented in the literature, many of which have been shown to be related to circadian disruption.

Monk and Tepas (1985, p.79) were of the opinion that shiftwork has important health consequences, which could come about in several ways: "Firstly, and most important, is the general loss of strength and well-being that occurs in ill-health The second way in which health factors can operate is through sleep. Many diseases are associated either directly or indirectly with a disruption of the sleep process" (p.79). They also mentioned that the effects of shiftwork itself could exacerbate certain disease conditions, for instance epileptic seizures, gastrointestinal conditions such as those associated with ulcers, or diabetes, where shiftwork might interfere with the regularity of medication. They were of the opinion that at present there is not sufficient data to support the idea that shiftwork invariably leads to any specific illness or disease. Monk and Folkard (1983) put the issue of shiftwork and health in perspective by pointing out that shiftwork is a stressor, and additional stressors may lead to a breakdown in the individual that might not have appeared had multiple stressors not been coincident.

Some research has suggested a relationship between shiftwork and certain functional disorders (Singer, 1982), but probably again through the mechanism of exacerbation. An example of such a functional disorder associated with

shiftwork is gastrointestinal complaints. The Industrial Health Research Group at the University of Cape Town pointed out that there are a number of reasons why shiftwork should lead to digestive disorders and disease, viz.:

For social and practical reasons it is often difficult for people to increase the amount of food they eat during the meals before and after unsocial work hours nightshift workers are often unable to get food, especially hot food, because canteens do not stay open. Shiftworkers tend to eat at times which vary according to their shift cycles, and sometimes conflict with the circadian variation in their digestion. (1987, p.2)

Research findings as reported by Koller (1983) and the Industrial Health Research Group confirm this higher incidence of digestive disorders and diseases amongst shiftworkers. Greenwood (1983) reported findings of shiftworkers describing more symptoms of both physical and mental fatigue, using more medication and pills than dayworkers; in general, he found that "a consistent pattern of health deficit is reported by shiftworkers in this survey similar to that uncovered in previous research " (Greenwood, 1983, p.12). Singer (1982) outlined evidence for an increased incidence of ulcers, and minor psychological difficulties such as headaches, nervousness, trembling

hands, poor concentration and sexual problems amongst shiftworkers, while Koller (1983) reported evidence of shiftworkers scoring lower on a general health scale for all age groups. The health-risk of shiftworkers has in fact been suggested by Knutsson, Jonsson, Akerstedt and Orth-Gomer (1986) to include an increased risk of ischaemic heart disease, on the basis of research findings using former shiftworkers as well as current shiftworkers. On the whole, there appears to be a plethora of research findings linking health factors to shiftwork, the bulk of which I am unable to address at this stage. A number of good reviews exist e.g. Rutenfranz, Haider and Koller (1985).

Sleep

Extensive attention has been paid in the literature to the relationship between shiftwork and sleep. Hancock (1986), as well as Monk and Folkard (1983), in fact observed that there are only two things wrong with shiftwork: First, you have to work when you should be asleep, and second, you have to sleep when you should be awake. Shiftwork, and particularly night work, has consistently been shown to affect the quality and quantity of sleep (Akerstedt & Torsval, 1981; Frese & Harwich, 1984; Rutenfranz et al., 1977; Smith & Colligan, 1982). Monk and Tepas (1985) have suggested that sleep problems could probably be both the symptom and the cause of shiftwork maladjustment. The

Industrial Health Research Group pointed out that there are two main reasons why shiftwork should affect the quality and quantity of sleep, viz.:

First, shiftworkers regularly have to sleep at times when the conditions for doing so are not good, i.e. noise, social and light conditions are bad for sleeping. Secondly, night working and day sleeping are contrary to powerful day/night rhythms (circadian rhythms) which have been shown to determine hormone levels, heart rate, blood pressure and a number of other physical states. These affect a person's wakefulness, alertness and drowsiness. (1987, p.1)

Such reasoning finds support in the writings of Hancock (1986), Monk and Tepas (1985) and Rutenfranz et al. (1977). The influence of shiftwork on sleep and the consequent effects thereof, be these on health, social adjustment or whatever, will obviously depend upon a variety of shift-related factors such as whether there is nightwork involved, the extent of nightwork, diverse individual characteristics, and the interaction of such factors. Tepas (1982) referred to partial and sleep deprivation effects, Smith (1982) to "cumulative fatigue" and Kogi (1985) to "shift lag". Obviously the number and extent of such effects will need to be evaluated in the context in

question.

Domestic and Social Adjustment

The impact of work on the family is an issue gaining increasing attention. Walker (1985) pointed out that humans are social beings, and as such domestic and social factors are at least as important as the biological ones. With regard to the impact of shiftwork, Rutenfranz et al. pointed out that:

From the medical point of view, the physiological problems of shiftwork are considered the most important. However, the shiftworkers themselves have a different attitude. For them the most important problems are psychosocial ones, such as the extent to which shift work disrupts their family routine or interferes with their social life. (1977, p.173)

Shiftwork has been shown to have diverse and far-reaching effects on the individual's 'out of work' or family and social life. Rowland stated that "each pattern of shift roster poses different problems in synchronising the hours of work with family and social life" (1982, p.3). Walker commented in the same vein that, "the displacement for the shiftworker in time and space

results in domestic inconvenience for the individual and spouse, and for other members of the family" (1985, p.211). Staines and Pleck (1984) concluded that working on nonstandard days, e.g. weekend work and variable days, is associated with less time in family roles, higher levels of specific types of conflict between work and family life and lower levels of family adjustment. Smith (1982) referred to "sexless shifts", Singer (1985B) to social dislocation and inconvenience, while Walker (1985) discussed the effects on family relationships, parenting roles, participation in institutional life and the concept of 'social value' of time. Rutenfranz et al. (1977) introduced the concept of social rhythms, and asserted that major difficulties arise for shiftworkers in synchronising their activities and social life with the work hours of the normal population.

It is important, however, to bear in mind that not all the effects of shiftwork on domestic and social life are adverse. On the contrary, Walker (1985) pointed out some "counterveiling advantages" of shiftwork, such as the opportunity to pursue hobbies and interests in daylight hours, and the availability of facilities open during weekdays only. Rowland (1982) pointed out further advantages with regard to family and personal routines such as childcare etc. Brown (1978) discussed three groups of women who appeared to use shiftwork consciously to solve problems in their out of work life. Nevertheless, Walker

concluded that "shiftwork interferes with the social and family life of shiftworkers more than it facilitates it" (1985, p.225), a sentiment apparently shared by other authors and researchers in the field.

Work-related Consequences

A fair amount of research has been conducted on the link between shiftwork and performance, generally demonstrating that "the circadian fluctuations in physiology ... are reflected in equivalent fluctuations in mood and efficiency" (Monk & Tepas, 1985, p.73). Monk and Tepas (1985) provided an excellent review of many of the major research findings in this respect. Their conclusions provide adequate insight into the matter:

From the point of view of blue collar shift worker performance, ... it is probably safe to conclude that for many tasks the performance rhythm will parallel the body temperature rhythm, thus showing decrements during the night hours. This conclusion is confirmed when the circadian variation in actual 'on-the-job' performance is measured for various tasks. (Monk & Tepas, 1985, p.75)

Folkard and Monk (1979) provided evidence to this effect and

concluded that, in the main, performance at night is inferior to that during the day. Smith summarised the issue at hand in stating that "biological and social factors suggest performance efficiency and individual well-being are best suited by day work with weekends off" (1982, p.17).

Other work-related factors have also been shown to be affected, frequently adversely. Hancock (1986) has suggested a potential increase in errors as a consequence of tiredness and/or lack of sleep, and outlined the potential catastrophic consequences of such in airline employees. Rutenfranz et al. (1977) have outlined results suggesting potential increases in accidents and errors in certain situations. Zedeck et al. (1983) have linked turnover intention to certain aspects of shiftwork and to the inability of employees to adapt to it. Jamal (1981) reported research results which suggested high routine-orientated schedules, as opposed to rotating shifts, to be related to increased mental health, job satisfaction, organisational commitment and lower absenteeism, turnover and tardiness.

Conditioning Variables

Shiftwork Stress

Theoretically it is possible that one or more variables

could enhance or reduce the relationship between a stressor and its consequences. Such variables have been referred to as conditioning, moderator, buffer or intervening variables. In discussing the "shiftworkers' problems," Kogi (1985) pointed out that the degree of strain experienced by an individual worker depends on the intervening variables. He pointed out that "the most important of these are housing conditions (especially sleeping conditions), family status (age of children, acceptance of shiftwork by the family), personality and differences in physiological adaptability" (Kogi, 1985, p.180). In the same context, Jamal (1981) mentioned marital status, place of socialisation, cultural background, seniority and gender.

Apart from age, none of these conditioning variables has to date received a great deal of attention. With regard to age, the findings have been diverse. Akerstedt and Torsval (1981) pointed out that at a certain age, i.e. late 40's, early 50's, for some shiftwork suddenly becomes intolerable. On the whole, the research available seems to suggest that, contrary to expectations, the adverse effects of shiftwork appear to increase with length of service in shifts and/or age. Zedeck et al. asserted that:

The general findings at this point are that the older employee is more satisfied with the shift and makes better adjustment to meals; and those who

are more satisfied are in better health, yet the older workers are in poorer health. (The pattern is similar for adjustment to sleep schedules (1983, p.307))

The author failed to uncover any further literature or research regarding moderating or conditioning variables and their influence on shiftwork stress, besides a brief mention by Rowland (1982) in discussing social and community issues: "Supportive social and family groups are a significant asset for providing the conditions for relaxation, for unwinding, and being a respite from stressing circumstances in life" (1982, p.2). The author believes that there exists a gap in the literature in this regard and poses such to be a potential opportunity for research.

Stress Situations in General

For the purposes of the rest of the dissertation, it is necessary to return to the topic of conditioning variables. In the absence of research on conditioning variables, in the relationship between shiftwork stress and its consequences, it is proposed to review literature on some variables that have shown promise in research on other stressors. The potential conditioning variables selected for this purpose are also those included in the empirical

study to be reported later. The purpose was to investigate whether these variables would act in a similar way in the shiftwork context as they have acted in studies that concerned other stressors.

Three personality variables viz. potency, trait anxiety and trait anger will be presented first, followed by a discussion of social support as a potential moderator for the environment.

Potency. The term "personality repertoire" was introduced by Rosenbaum who described it as not a personality trait, but rather "a set of behaviours, cognitions and affects that are in constant interaction with the social and physical environment of the person" (1988, p.3). The personality repertoire to be introduced in the present research is that of potency, as outlined by Ben-Sira (1985). He has posed potency as a "stress-buffering link in the coping-stress- disease relationship" (1985, p.397). He also described it as a tension-resolving mechanism and as "a homeostasis- stabilizing mechanism ... which intervenes between coping outcomes and emotional homeostasis, thus fulfilling a stress-buffering function" (1985, p.403) in the context that homeostasis restoration is essential for the prevention of stress and consequent breakdown and, hence, essential for health maintenance. In an attempt to define potency formally, Ben-Sira stated that:

Potency implies a person's enduring confidence in his own capacities as well as confidence in and commitment to his/her social environment, which is perceived as being characterized by a basically meaningful and predictable order and by a reliable and just distribution of rewards. (1985, p.399)

According to Ben-Sira (1985), potency develops as a consequence of an accumulation of successful coping experiences, as well as through facilitating of a "homeostasis-stabilizing function" in preventing tension (following occasional inadequate coping), from turning into lasting stress. Ben-Sira's (1985) research in this field led him to conclude that potency is a product of favourable experiences with both coping and primary social support, hence the dual dimensions of confidence in oneself and in the social environment. To conclude then, "a person with strong potency will be more stable emotionally, less affected by occasional failures in coping, as well as less affected by specific resource deficiencies" (Ben-Sira, 1985, p.404).

Ben-Sira's construct of potency is closely related to the constructs of personality hardiness (Kobasa, 1982; Kobasa & Maddi, 1977), sense of coherence (Antonovsky, 1979, 1984, 1987) and learned resourcefulness (Rosenbaum, 1988). In Antonovsky's terminology, these all describe aspects of

salutogenesis, an orientation which focuses on the origins of health, as opposed to the traditional pathological orientation towards the origins of disease.

Trait Anxiety. Before considering trait anxiety and trait anger separately, it is important to note that research conducted and reported by researchers, like Spielberger and his co-workers (Spielberger 1972; Spielberger, Jacobs, Russell & Crane, 1983; Spielberger et al., 1985), has led to a distinction between state and trait characteristics. Specifically, the term 'state' refers to a transitory emotional condition with the term 'trait' denoting a relatively stable predisposition (Endler & Magnusson, 1976). This state-trait distinction is posed to be critical both in understanding and measuring the construct.

With regard to trait anxiety, once again authors on the topic emphasise the interaction or complex interplay between the person and the situation (Endler & Edwards, 1982). Once again, a distinction between state anxiety (A-State), a transitory emotional condition, and trait anxiety (A-Trait), a relatively stable predisposition to respond to certain types of stress, is crucial to understanding the concepts (Endler & Magnusson, 1976). Spielberger defined the two constructs as follows:

State anxiety is a reaction, consisting of unpleasant, consciously-perceived feelings of tension and apprehension, with associated activation or arousal of the autonomic nervous system. (1972, p.29)

Trait anxiety refers to relatively stable individual differences in anxiety proneness, i.e. to differences among people in the disposition or tendency to perceive a wide range of situations as threatening and to respond to these situations with differential elevations in state anxiety. (1975, p.137)

In analysing stressful situations, it is proposed that individual differences in anxiety proneness, and particularly their anxiety-related predispositions (trait anxiety), will exert a conditioning influence on the reactions to stress; the exact dimensions of such influence would obviously be both situationally and individually specific. Such an hypothesis is in line with research results by Bucky, Spielberger and Bale (1972) and Endler and Edwards (1982).

Trait Anger. Theories considering personality characteristics or behavioural attributes and their role in influencing health-related outcomes of stress, have also extended to consideration of trait anger (Endler & Edwards 1982; Siegel, 1985; Spielberger et al., 1983, 1985). Indeed, "anger, hostility and aggression have long been

regarded as important factors in the etiology of essential hypertension and coronary heart disease" (Spielberger et al., 1985, p.5).

Although much has been written about the negative impact of anger and hostility on physical and psychological well-being, definitions of these constructs are ambiguous and sometimes contradictory (Spielberger et al., 1983). In outlining and developing the State-Trait Anger Scale, Spielberger et al. pointed out that "the concept of anger usually refers to an emotional state that consists of feelings that vary in intensity, from mild irritation or annoyance to fury and rage" (1985, p.6). Furthermore, bearing in mind the state-trait distinction, anger can be conceptualised both as an emotional state that varies in intensity and as a relatively stable personality trait. In constructing the scale, Spielberger et al. used the following working definitions:

State anger (S-Anger) was defined as an emotional state or condition that consists of subjective feelings of tension, annoyance, irritation, fury and rage, with concomitant activation or arousal of the autonomic nervous system S-Anger can vary in intensity and fluctuate over time as a function of perceived affronts or injustice, or frustration resulting from the blocking of goal-directed behavior.

Trait anger was defined in terms of individual differences in the frequency that State-anger was experienced over time (1983, p.169)

Regarding trait anger, the assumptions on which these definitions are based is that persons high in trait-anger are more likely to perceive a wide range of situations as anger-provoking (i.e. annoying, irritating, frustrating), and to respond to such situations with elevations in state anger. Furthermore, such persons are predicted to experience more intense elevations in state anger whenever annoying or frustrating conditions are encountered (Spielberger et al. 1983, 1985). In the present study, these individual differences in anger-proneness as a personality trait are posed as a potential moderating variable on the experience of work schedule stress.

Social Support. The topic of social support, specifically with regard to its potential effects on individuals' health and wellbeing, has emerged in the last decade to become a central focus of basic and applied research on social and occupational stress (Williams & House, 1985). Williams and House pointed out that the increasing interest in the topic relates to the "particularly potent role it may be able to play in reducing the prevalence and health impact of one of the major

emerging health hazards of the modern industrial world - stress at work and outside of work" (1985, p.207). Whilst there is no clear consensus with regard to a definition of social support, there does, however, appear to be reasonable consensus in the literature regarding its general nature and the fact that it moderates stress and/or its health consequences in some way (House, 1981, 1983; Jacobson, 1986). Once again, whilst excellent reviews of the concept exist (e.g. House, 1981; Kasl & Cobb, 1979) this report is restricted to a brief overview of the major considerations and research findings.

Cobb initially defined social support as "information leading the subject to believe that he is cared for and loved, that he is esteemed and valued, and that he belongs to a network of communication and mutual obligation" (1976, p.300). House proposed a more comprehensive definition, that "social support involves the flow between people of emotional concern, instrumental aid, information, or appraisal" (House, 1983, p.3). Diverse opinions and evidence exist with regard to the specific types of social support and the ways they function. House (1981, 1983) suggested that social support has the ability to promote human health and well-being in multiple ways. Three major means of operation have been proposed in connection with the stress mediation effect of social support, two of which are regarded as 'main affects' with the third being proposed to

be a 'buffering' effect (House, 1981, 1983; Williams & House, 1985):

Firstly, support can directly enhance health by supplying human needs for affection, approval, social contact and security. Secondly, by reducing interpersonal tensions and generally having other positive effects in the work environment, support can directly reduce levels of stress and indirectly improve health. Thirdly, in accordance with the buffering hypothesis, instead of having direct effects on stress or health, social support modifies the relationship between stress and health and protects the individual from the negative consequences of stress. (Williams & House, 1985, p.208)

Extensive research support exists for each of these effects of social support in certain circumstances.

It is important to note that the types of social support are diverse. Jacobson (1986) outlined what he referred to as a tripartite classification of primary aspects of support, viz. emotional support, cognitive support and material support. Furthermore, the support can emerge from a variety of sources, ranging from friends and acquaintances, to family and more distant relatives, to

subordinates, peers or colleagues and superiors (House, 1981, 1983; Shamir & Salomon, 1985; Williams & House, 1985). The effectiveness of the social support would depend on issues such as timing (Jacobson, 1986); appraisal (Vaux & Athanassopoulou, 1987) and overall appropriateness with regard to the context in which such support occurs (Williams & House, 1985).

The overview will focus only on some research regarding occupational stress, although extensive evidence exists of such effects operating in the non-work world as well.

In research via general population surveys and measuring stressors which included occupational stressors, Brown and Harris (1978) presented strong evidence of social support operating as a mediator between life events and the onset of depression. Anneshensel and Stone (1982), in a study of 1003 adults, reported a negative relationship between social support and depressive symptomatology. Brownell's research (cited by Williams & House, 1985) provided evidence of emotional or tangible support from family, friends, or co-workers buffering the association between occupational stress and psychological and physiological symptoms. Further evidence for the role of support in reducing the negative impact of job stress with regard to angina pectoris and coronary heart disease was provided in research by Haynes and Feinleib (1980), as well as Medalie and Goldbourt

(1976) and Medalie et al. (1973). Evidence of social support shielding workers from the deleterious effects of unemployment was provided by Cobb and Kasl (1977), Gore (1978), and Kasl and Cobb, (1979).

Research evidence regarding buffering effects of social support has to date, however, not been consistent. Research conducted by French (1973) and Cobb (1976) provided strong evidence in support of buffering. La Rocco, House & French (1980) provided further evidence of support buffering the association between stress and mental and physical health outcomes such as anxiety, irritation, and somatic symptoms. House and Wells (1978) reported social support to have conditioned the effects of job stress on ulcers and neurosis in a study of 1800 males. Further research findings offering support for the buffering effect were those of Karasek, Triantis and Chaudhry (1982) and Winnubst, Marcilssen and Kleber (1982). Evidence to the contrary, i.e. questioning the existence of such buffering effects and, in fact, promoting the importance of main effects of social support are to be found in the work of Pinneau (1976) and of La Rocco and Jones (1978). These latter findings have, however, been questioned on the basis of methodological considerations.

The fact that there is no consensus regarding the nature and extent of the relationships of social support to stress

and health could possibly be addressed via enhancing research designs (Williams & House, 1985). The overall body of evidence, however, seems to support the existence of important main and buffering effects of support on occupational stress and health (House, 1981; La Rocco, House & French, 1980). Given the strength of the evidence regarding the role of social support in stressful situations, Williams and House (1985) pointed out that a question of interest concerns the conditions under which we tend to observe main effects versus buffering-effects versus combinations of main and buffering effects. To attempt to summarise the main trends in this regard, it appears from the research evidence that social support appears to have main but not buffering effects of job-related strains such as job satisfaction (House, 1981). Furthermore, while buffering affects appear to be more limited than main affects, they appear to be particularly evident for mental health symptoms of the nature of depression, irritation and anxiety (Karasek et al. 1982; La Rocco et al., 1980; Winnubst et al, 1982). Finally, with regard to source of support, the evidence shows that "both work and non-work sources appear important, with the effects varying depending on the stressor and strain under consideration" (Williams & House, 1985, p.215). La Rocco et al. (1980) summarised these effects by pointing out that, in general, support from work sources appears most relevant for work-associated strains, while support from non-work sources appears to be

important for the more general strains.

In conclusion, it is obvious that, social support and its effects must be conceptualised within a wholistic, contextual framework in order to comprehend the complexities of the issues. The proposition of House (1981) as modified by Jacobson (1986), seems to sum up the situation: "The major issues in social support research can be expressed in the question 'who gives what to whom regarding which problems, and when?'" (1986, p.256).

Coping

As effectively functioning individuals, we are not passive victims falling prey to the adverse consequences of whatever stimuli we are exposed to. On the contrary, equipped with a range of resources, we do attempt to cope with the demands of life. In discussing coping, Holroyd and Lazarus expressed the following thoughts:

The term "coping" refers broadly to efforts to manage environmental and internal demands and conflicts among demands the dynamic constellation of thoughts and acts that constitute the coping process coping is multi-faceted and health outcomes are a product of effective coping rather than simply a consequence of the

presence or absence of stress. (1982, pp.24-25)

Pearlin and Schooler pointed out that coping refers to the things people do to avoid being harmed by "problematic social experience" (1978, p.2). Murphy (1985) added to this by pointing out that these 'things' "include cognitive, behavioral and somatic responses which are aimed at (1) eliminating or reducing the source of discomfort, (2) altering one's appraisal of the stressor, or (3) managing or reducing the feelings of discomfort within the individual (1985, p.225).

These 'efforts to manage' consist of a dynamic constellation of thoughts and acts that constitute the coping process (Holroyd & Lazarus, 1982). Individuals cope in various ways, according to their resources, predispositions etc.; diverse individual differences in the coping process are evident in both the perception of, and reactions to the stress at hand, with the efficacy of such coping strategies obviously being dependent on the multivariate factors involved (Murphy, 1985). As suggested earlier in Strumpfer's (1983, 1985) model, while the term coping is commonly associated with positive, health enhancing activities, coping behaviours which people actually use do also include maladaptive behaviours. Strumpfer (1983) outlined three categories of coping behaviours, including regressive, therapeutic avoidance and transformational. In

assessing the process of coping, it is obvious that, aside from the actual coping response, the relative effectiveness of coping is also crucial. Pearlin and Schooler (1978) stated that a coping response may be considered effective if it reduced (buffered) the relationship between stressors and strains. No single coping mechanism is protective across all life and work areas (Murphy, 1985). On the contrary, individuals must necessarily have a broad coping repertoire at their disposal to be used as and when appropriate.

Research has been conducted in occupational settings with regard to the efficacy of various coping mechanisms (Pearlin & Schooler, 1978). Pearlin and Schooler (1978) pointed out that in certain situations due to the relative 'powerlessness' of the individual, effective coping may be better accomplished through collectivities. Furthermore, the range of potential coping mechanisms is as extensive as the number of individuals involved and hence an area one cannot attempt to address within the confines of a dissertation.

With regard to coping with shiftwork, authors such as Kogi (1985), Nilsson (1978) and Rowland (1982), have pointed out various mechanisms being used by individuals in attempts to counteract the stress actively, such as the "night time nap" (Kogi, 1985), adapting eating patterns (Singer, 1982), sleeping in advance before a night shift, reorganising

family schedules, etc. Others have provided evidence of increased use of alcohol, coffee, smoking, medication and pill consumption (e.g. Greenwood, 1983). Whatever the strategy employed, coping strategies are necessary in view of evidence cited earlier that circadian and biological rhythms never adapt to shiftwork (Smith, 1982; Tasto, 1978). Hence, shiftworkers must exert extra efforts in attempting to adjust to and cope with their unusual work-rest schedules (Kogi, 1985; Nilsson (1978). Once again, it is important to maintain a wholistic framework and consider the influence of contextual, situational and individual factors.

Conclusion

In concluding the review of shiftwork-related literature, there are two broad observations that need to be made. The first regards attitudes to shifts. Rowland (1982) and Smith (1982) have reported diverse attitudes to shifts, with morning shifts frequently rating high in preference and night shifts lowest. Furthermore, whilst many dislike shiftwork and the consequent stress, discomfort and associated problems, all is not adverse in shiftworking. On the contrary, there are various reported positive aspects to shiftwork too, the most obvious being an economic gain frequently due to penalty payments being paid to shiftworkers for the inconvenience of working shifts (Rowland, 1982, Singer, 1985a;). Furthermore, Rowland

(1982) reported shiftworkers to have outlined opportunities for increased time at home, for moonlighting etc. as positive aspects of shiftwork.

The second observation is that analyses of reasons for leaving shiftwork have shown that, while persons who leave shiftwork generally do so because they have difficulty in adapting to the demands placed by shiftwork, those who remain tend to become a "survivor population" (Frese & Okonek, 1984; Rowland, 1982; Smith, 1982; Wedderburn, 1967). Smith (1982) has pointed out that ex-shiftworkers who could not cope, had significantly poorer health records than either shiftworkers or day workers.

The phenomenon of shiftwork and its consequences thus constitute a complex problem, and research geared at investigating it should treat it as such. One of the prime motivations for investigating the topic may be to facilitate the design of shiftwork systems based on physiological, psychological and social criteria. On the other hand, as Singer (1985b) pointed out, it is not feasible to attempt to get rid of the effects of shiftwork totally. Neither would it be possible to do away with technologies that require continuous, round-the-clock processing, like many chemical manufacturing processes, metal production, or, for that matter, round-the-clock travel. For these reasons we should aim to design rosters so as to minimise the adverse effects

of shiftwork on health and social life caused by the disruption of circadian patterns, as well as find other ways of reducing distress and possibly increasing eustress.

WELLNESS

The majority of literature available and reviewed discusses stress and its health-related consequences - be it occupational or other stress, and consequent minor ailments or discomfort such as tension headaches, or in fact more serious illness or disease such as coronary heart disease. Evidently, links between stress and health have been established. It is proposed that the concept of health be extended in the present research. Specifically, it is suggested that there is more to health than strictly physical or biological wellbeing, i.e. the absence of disease and medical sickness. In this vein, it is suggested that the concept of psychological health and social wellbeing should be incorporated into discussions of health, leading to the concept of wellness. The topic of wellness has been gaining increasing attention of late, as pointed out by Kreitner (1982) referring to the "wellness revolution." Muzlai provided support for this in stating that "the emphasis has shifted from merely physical health to complete or total health, in other words, to addressing all aspects of health, both physical and psychological" (1984, p.11).

Definitions of wellness have been suggested in the literature. Garry (1980) defined wellness as dealing with the physical and mental self, including the constructive use of the mind, channelling stress energies positively and enhancing performance through balanced nutrition and physical health. Kreitner described wellness as "a harmonious and productive balance of physical, mental, and social wellbeing brought about by the acceptance of one's personal responsibility for developing and adhering to a health promotion program" (1982, p.28). Both these definitions include the concept of personal responsibility for wellness, an idea along the lines of one of the "new directions" suggested by Naisbett (1984) to be pertinent in our lives, i.e. the change from institutional help to self-help. Kreitner (1982) suggested that wellness involves constructing a lifestyle that will enable the individual to achieve his or her full potential. The concept of wellness is thus multifaceted and all-embracing, as Muzlai pointed out:

The wellness of an individual is made up of several variables or components. Wellness takes into account a person's physical health, mental wellbeing, work satisfaction, health related living habits (for example, types of food consumed, drinking, smoking, drug taking etc.), social

support, social participating, marital satisfaction, etc. (1984, p.13)

It is with this all-embracing concept of health, that of wellness, that the present research is concerned. More specifically, whilst measuring the various components of wellness separately, primarily in the form of health-related consequences, these will be integrated with the social and mental wellness indicators, as measured, in the results and discussion chapters to provide a wholistic insight into the wellness of the CA.

RESEARCH QUESTIONS AND HYPOTHESES

At this stage, having reviewed the literature in the field, it is clear that shiftwork is an occupational stressor for employees which also raises certain problems for their employing organisations. Furthermore, shiftwork has been portrayed in the literature as complex and multifaceted, with various components such as cultural antecedents, organisational features and conditioning variables, as outlined in Strumpfer's (1983) model, playing a role in influencing the consequences of shiftwork stress.

The present research was exploratory with respect to the qualitative description of work schedule stress. In this connection answers were sought to the following questions:

- (1) Assuming that the work schedules of CAs are both an important and unique source of stress for them, to what extent are the work schedules stressful?
- (2) What specific aspects of the work schedules are stressful?
- (3) Are there any positive aspects to these work schedules?
- (4) How is work schedule stress related to other organisational features?
- (5) What are the coping mechanisms which CAs draw upon in order to cope successfully with the work schedules?
- (6) What is the impact of such work schedule stress on the wellness of the CA?
- (7) What are the crucial moderating or conditioning variables which enhance successful coping and subsequent wellness, or which buffer the relationship between work schedule stress and wellness.

The qualitative phase of the study was followed by a quantitative phase, based on questionnaire data, as well as a number of content analysis scores derived from the qualitative data. On the basis of the literature review, the following two hypotheses were formulated for this part of the study. These are outlined below.

- (1) Work schedule stress is an important stressor for CAs and is inversely related to self-reported measures

of health.

- (2) The relationship between work schedule stress and health measures is buffered by the personality variables of potency, trait anxiety and trait anger, as well as social support as experienced by the CA.

The next chapter will present details of the methodology followed in both phases of the research.

CHAPTER 3

METHODOLOGY

The objective of this chapter is to outline the research design and methodology used in the present study. The actual instruments used to measure the variables, as well as the techniques employed to gather and analyse data will be outlined. By so doing, further insight will be provided into both the parameters of the current research and definitional considerations of the variables.

As mentioned earlier, the research was conducted in conjunction with a fellow student, G. Tilley (1988). The objective of her research was to investigate the various facets of the work experience of female air CAs, with particular focus on their stress experiences as related to the concept of subordinate service roles. The combination of the two research projects was primarily in the data collection phase. The joint study facilitated a global insight into the work-related experiences of the CA. The two research projects are thus complementary. For the purposes of this report, only those instruments used in the present study will be discussed. The discussion of methodology will be conducted in two parts. First an outline of data collection procedures, both qualitative and quantitative will be given; the instruments used in the

quantitative phase will also be included. This will be followed by an outline of the techniques of analysis.

SAMPLE

The sample consisted of 108 'domestic crew' and 43 'international crew'. Whilst the prime focus of this research was on domestic crew, the small group of international crew were included for comparative purposes. For the purposes of this report, and in accordance with SAA procedures, domestic crew are defined as those crew involved in flying local or national flights primarily within the boundaries of South Africa, although they could be required to fly cross-border flights to neighbouring states such as Namibia, should the need arise and they be suitably qualified. Such qualification refers to the emergency and inflight service procedures for the type of aircraft she is required to operate and the training requirements in this regard. The sample of domestic crew included CAs who have only flown locally, as well as CAs who have flown internationally for a certain period of time but whom have subsequently been flying domestic flights for a minimum of six months, for whatever reasons. International crew, on the other hand, were defined as those crew who are primarily involved with flying overseas or across-border flights and were qualified for such, although their rosters could and frequently did include local flights

between overseas trips. The sample of international crew included CAs who have flown domestically for a minimum of six months in training, although many have flown domestically for longer periods of time, and have been engaged in overseas flights for a minimum of the past six months.

The sample was selected randomly from CAs engaged in standby duty in both Johannesburg and Cape Town, thus excluding more senior crew and cabin controllers who do standby at home. Participants had to have been flying for a minimum of three years to qualify for inclusion in the research. Participation was voluntary. In total, only two CAs approached declined to participate. The sample was confined to female CAs solely to keep it homogeneous.

QUALITATIVE DATA COLLECTION

A relatively unstructured interview was conducted by either the author or the co-researcher with each of the 151 participants. The interviews lasted between 30 and 60 minutes and were conducted with the objective of gaining a wholistic insight into the working experience of the CA, including both its stressful and positive aspects, interpersonal relationships etc. The interviewers did have broad areas which they endeavoured to discuss in the interview. An outline of the areas of focus in the

interviews and examples of certain of the open-ended questions asked are contained in Appendix A. Of importance to the present study was the topic of work schedules, where particular attention was given in a more structured way, to positive and negative aspects, peak times, weekends, relationships, out-of-work activities, ways of coping etc. Extensive notes were taken during the interview to facilitate subsequent analysis. Both the interviewers are skilled via extensive training and experience in interviewing techniques.

Qualitative data were collected due to their direct access to "the situation as it is" and to in-depth, "warm" information. Notwithstanding problems with regard to analysis, qualitative data surpass any information gleaned from questionnaires and scales in these respects. Such a method was also appropriate to the current study due to its exploratory nature into a relatively unique situation; research conducted on the basis of formal, predetermined hypotheses and the measurement of variables via solely quantitative means would have been self-restricting.

QUANTITATIVE DATA COLLECTION

The process of quantitative data collection was in itself twofold. At the end of the interview, the domestic CAs were given a self-report questionnaire which they were asked to

complete and return to the researchers. Of the 108 questionnaires distributed only 75 were returned, notwithstanding telephone calls and messages; the fact that CAs were travelling or were jealous of their time off made it exceptionally difficult to reach them after the interview. The return rate was thus 69.5%.

To increase anonymity the questionnaires were coded to facilitate subsequent linking to the interview data. Participants received two questionnaires, the Work Schedule Stress Scale (see Appendix B) and another entitled Self-description Inventory, which contained the 12 remaining scales used in the present study, as well as others used in Tilley's (1988) study (see Appendix C; Appendix D lists the scales, their sources and scoring).

The second part of the quantitative analysis involved the author and the co-researcher in jointly constructing scales on the basis of the content analyses of the qualitative data. The researchers then rated participants on each of these dimensions, first individually and then jointly to ensure inter-rater reliability. An outline of these scales may be found in Appendix E. These dimensions were believed to complement the scales referred to above. The scores so obtained were subjected to quantitative analysis along with the self-rated scores. A total of six scales were so constructed, of which three were relevant for

the current research. All of these measures will be outlined below.

Measuring Instruments

The measuring instruments used in the research fall into three broad categories in respect of the type of variable they are designed to assess, i.e. a measure of work schedule stress, a number of moderator variables and a number of consequences, and shall be discussed accordingly.

Work Schedule Stress

An initial pool of 40 items was written to incorporate facets of shiftwork described in the literature as stressful, as well as facets shown to be relevant to the SAA situation in a series of pilot interviews conducted with CAs and flight co-ordinators at the SAA. The scale was administered to the CAs along with the "Self-description Inventory". On the basis of responses from 80 participants the scale was then subjected to an item analysis. The 80 participants used included both domestic and international crew. The objective was to extract a new, shortened scale using the items which exhibited the highest item-total correlations. Given that the scale involved multiple choice response, the specific analysis conducted involved the use of Gulliksen's Index: (RXSJ), where RX is the point

bi-serial correlation of each item with the total score on the original forty items, and SJ is the standard deviation of the proportion of people who responded. The item analysis was conducted with two iterations, with $RXSJ = ,400$ as cut-off point, leading to the deletion of eight items. The resulting scale, as used in the final analysis, thus consisted of 32 items; the scale appears in Appendix B. It showed a Kuder-Richardson 20 reliability coefficient of ,94. The scale involved responding on a 5-point scale of responses ranging from 1 = "not applicable", to 5 = "always". The final score for Work Schedule Stress was the sum of the scores for the thirty items. The minimum score obtainable was 32 and the maximum was 160, with a high score representing a high level of perceived work schedule stress.

Moderators

As outlined earlier, a selection of variables referred to as moderators were hypothesised potentially to buffer the relationship between the stressors and consequences. Three of these represented personality aspects and the fourth an environmental aspect. These scales, as well as the remaining scales of the Self-Description Inventory appear in Appendix C, with Appendix D providing the key to Appendix C.

Potency. Ben-Sira's (1985) Potency Scale contains 19 items answered on a 6 point scale (see Items 5 - 23,

Appendix C). The scale includes indications of mastery (Items 5 - 10), self-confidence (Items 11 - 13), alienation from or commitment to society (Items 14 - 18) and anomie or belief in the meaningfulness and orderliness of society (Items 19 - 23). According to Ben-Sira (1985), these components constitute potency.

Trait Anxiety. This scale is a 10-item subscale of the State-Trait Personality Inventory (Spielberger et al., 1980). Participants respond in terms of how they feel generally by rating themselves on each item on a 4-point scale (see Appendix C and D).

Trait Anger. This is another 10-item subscale of the State-Trait Personality Inventory (Spielberger et al., 1980, 1983; see Appendix C and D). Again participants respond in terms of how they feel generally, also by means of 4-point response scales. Factor analyses have shown that the scale is constituted of two factors, viz. Angry Temperament (Items 61, 63, 65, 71) and Angry Reaction (Items 67, 69, 75, 79) and two other trait anger items (Items 73, 77). According to Spielberger et al.: "The trait anger/temperament items describe individual differences in the disposition to express anger, without specifying any provoking circumstances. In contrast, the Trait anger/reaction items describe anger responses in situations that involve frustration and/or negative evaluations" (1983, p.176). A

single total score was used in the present study.

Social Support. Two scales were used to assess social support, termed Social Support I and Social Support II, with the former based on qualitative and the latter on quantitative aspects of support.

Social Support I, was a scale developed for this study in order to quantify qualitative information. This was considered necessary in view of findings in the literature by researchers such as House (1981, 1983) and Jacobson (1986) who outlined various sources of social support. It was in line with the opinion expressed by Vaux and Anthanassopoulou that: "Knowledge of people's subjective appraisals of the adequacy of support is more critical to the prediction of their wellbeing than simply collecting information about the number of supports or the quantity of supportive behavior to which they have access" (1987, p.538). The categories of social support were extended from the four sources referred to in the literature (e.g. House, 1981, 1983; Jacobson, 1986) to five categories by separating managers from supervisors as sources of support. This was believed appropriate to the SAA situation where cabin attendants perceive a distinct difference between supervisors whom they fly with and 'managers', i.e. those superiors based at Jan Smuts and D.F. Malan Airports. Ratings were done on a 5-item scale. The researchers,

working independently, assessed each subject, on the basis of the interview information, and assigned her a score on a 4-point scale as appropriate. Disagreements were eliminated through careful discussion. Obtainable scores ranged from 5 to 20 with high scores indicating high degrees of perceived social support. The rating categories are shown in Appendix E.

The second measure of social support used, referred to as Social Support II, constituted an objective measure of the number of close relationships. This was a single item from Aneshensel and Stone, on which participants were asked for the number of close relatives and of close friends they had, with "close" described as "people you feel at ease with, can talk to about private matters, and can call on for help" (1982, p.1393; see Item 39, Appendix C).

Consequences

A single wellness score based on content analyses of interview data, several self-report measures of health-related consequences, and a single work-related consequence, propensity to leave, were studied.

Wellness: A 4-item scale for the quantification of qualitative information was developed for this study to assess the overall wellness or well-being of the

participants. The scale consisted of four ratings which dealt with leading a meaningful life, being adequately rested, pursuing a healthy lifestyle and having adequate relaxation. Details of the contents of the scale appear in Appendix E. Scores ranged from 4 to 16 with high scores indicating wellness. The scoring was done by the two researchers working independently; disagreements were eliminated through careful discussion.

General Health. Garrity, Somes and Marx pointed out that "perception of one's own health status has proven a useful proxy measure for clinically-measured health status" (1978, p.77). Furthermore, the literature indicated that perceived health plays an important role in post-illness adjustment. The rating scale for general health used was developed by Garrity et al. (1978) and consists of a 10-step "ladder" with a request that respondents consider the top of the ladder as representing "the best your health could be" and the bottom as "the worst your health could be"; respondents indicated where along the ladder their health currently is. The scale is thus a measure to assess the individual's own perception of health (see Item 80, Appendix C). As Garrity et al. (1978) pointed out, the scale obtains a global measure of perceived health status, is simple to administer, is anchored in the respondent's personal concepts of "best" and "worst" possible health status. It has often been used for research purposes in the

study of health and morale.

Somatic Complaints. This measure was developed and validated on various samples by Caplan, Cobb, French, Harrison and Pinneau(1980). It required respondents to indicate the frequency of experience of eight complaints on the job in the past month, as well as two more items on appetite and sleep disorders (see Items 50 - 59, Appendix C).

Exhaustion. Karasek (1979) factor analysed a group of mental and physical illness symptoms and identified two factors, viz. exhaustion and depression. The 4-item Exhaustion Scale used in the present research was suggested by and adapted from Karasek (1979) and other sources (see Items 32 - 35, Appendix C).

Depression. As mentioned above, according to Karasek (1979), a second aspect of mental or psychological strain is depression. Karasek's (1979) Depression Scale was used in the present research. The scale consists of 10 items and the person has to choose between two opposite adjectives or phrases the one which best describes her life (see Items 40 - 49, Appendix C).

Substance Abuse. Patterns of smoking, alcohol consumption and pill consumption have often been used as

outcome measures in stress research.

A single item was included to assess quantity of cigarette smoking (Item 24, Appendix C).

Drinking was assessed by means of a 2-item scale used by Kessler, House and Turner (1987) which assesses frequency and quantity of alcohol consumed, with "amount drunk" being the product of such (see items 25 and 26, Appendix C).

A further health-related outcome or "strain indicator" (Karasek, 1979) has been shown to be pill consumption, including the use of tranquilizers (Karasek, 1979; Kessler et al., 1987). A two-item scale assessing the frequency of use of tranquilisers and/or tablets or other drugs to assist sleep as used by Kessler et al (1987) was used in the current research (see Items 27 and 28, Appendix C).

Propensity to Leave. In view of a growing number of variables, only one work-related consequence of stress could be included, viz., Propensity to Leave, measured by an index of three items adapted from Lyons (1971) (wording changed from "hospital" to "company"; (see Items 29 - 31, Appendix C).

METHODS OF ANALYSIS

As mentioned previously, the analysis was conducted in two phases, i.e. the qualitative and quantitative phases. Such combination of methodologies in the study of the same phenomenon was advocated by, for instance, Denzin (1978) and Jick (1979), since it enhances the overall strength and validity of the research. As Jick pointed out, "qualitative and quantitative methods should be viewed as complementary rather than rival camps" (1979, p.602).

With regard to the qualitative analysis, the techniques used were based in the principles of "grounded theory", as outlined by Turner (1983). In essence the technique involves the derivation of grounded 'concepts' which are then used as basic building blocks of the growing theoretical understanding. These are, in turn, elaborated in accordance with additional observations and ultimately developed into theoretical accounts which conform closely to the situations being observed (Turner, 1983).

The research essentially followed the four steps, outlined by Sieber (1973), as being useful guidelines for qualitative analysis: (1) interviewing of participants, analysis and data collection, (2) formulating classes of phenomena, (3) identifying themes, and (4) provisional listing of hypothesis. ✓

Miles (1979) indicated the shortfalls of qualitative analysis: that its techniques are more laborious, less reliable and less well formulated than those available for quantitative methods. Yet he also indicated that the advantage of qualitative results is their being "rich, full, earthy, holistic, real ... with unimpeachable face value" (Miles, 1979, p.590).

The quantitative analysis was done in a two-phase format of increasing complexity. Initially descriptive statistics were obtained and a bivariate correlational analysis conducted as a means of investigating relationships between the variables. Whilst the relationships uncovered in the correlational analysis were useful, such data by no means provide proof of causation (eg. Bluen, 1986).§

The second phase of statistical analysis was carried out in an attempt to examine the moderator effects, specifically of the four moderators, Potency, Social Support I, Trait Anxiety and Trait Anger, on the outcome variables of Wellness, Exhaustion, Depression, General Health, Somatic Complaints and Propensity to Leave. Subgroup analysis was used as a means of assessing such moderator effects. The appropriateness of this procedure was suggested by, for instance, Bluen (1986) as well as Zedeck (1971), despite certain inherent weaknesses which

shall be discussed later. The technique involved dividing the sample into sub-categories on the basis of the moderator variable scores. Specifically, the sample was split at the median of each moderator variable, thus obtaining a sub-sample high on that moderator (persons scoring above the median), and another one low on the moderator (those below the median). Correlation coefficients were then calculated between Work Schedule Stress and each of the outcome variables mentioned above, separately for the high and low subsamples for each of the moderators respectively. Comparisons were then made between the results obtained for each subgroup using Fisher's Z transformation technique (Howell, 1987). More specifically, significant differences between the pairs of correlations for the same consequence in the subsamples indicates the 'moderator' in question to exhibit moderating effects; conversely, no significant difference indicates the absence of moderator effects.

The research design thus involved a twofold process of analysis, with the qualitative analysis representing the backbone and confirmatory statistical analyses conducted in an attempt to enhance understanding.

CHAPTER 4

QUALITATIVE RESULTS

Findings of a qualitative, descriptive nature will be presented in this chapter. An outline of the work schedule system as agreed between SAA and the trade union, the SAA Cabin Staff Association, will be described first. An overview of the experience of work schedule stress and related facets, as reported by the CAs themselves will follow. Wherever possible, verbatim material will be used to present the flavour of the interview data. Unless otherwise indicated, words and phrases in this chapter contained in quotation marks are quotations of CAs as obtained in the interviews. Strümpfer's (1983, 1985) model of stress research will be used to structure the presentation on work schedule stress.

WORK SCHEDULE SYSTEM

The work schedule system for both the domestic and international crew is essentially defined by a broad set of rules as per the agreement between the management of the SAA and the Cabin Staff Association as official representatives of the cabin crew. The agreement itself states as its objective: "agreement for the avoidance of excessive fatigue in cabin crew." Essentially, the agreement

outlines the parameters for both domestic and international crew with regard to duty hours and periods, minimum rest periods, standby duties, overtime, rosters, etc. While the details of the agreement were obviously more extensive, the concepts, the broad parameters for domestic crew, as set out in the "Memorandum of Agreement for the Avoidance of Excessive Fatigue in Cabin Crew" of March, 1988 included:-

- Maximum duty period for which CAs may be scheduled shall be either 10 or 11 hours, depending on times concerned, with duty periods including any continuous period throughout which a CA is performing any functions assigned to her by the SAA.
- The number of sectors to be operated during any duty period shall not exceed five. (Note: A sector is that part of a flight which is undertaken between two consecutive landing stations on a multiple stop flight.)
- Maximum hours which may be scheduled within any calendar week shall be 50 hours.
- The cumulative totals of duty times for individual CAs shall not be scheduled to exceed 150 hours within any four calendar week period. (Overtime paid after 110 hours.)
- Rest periods at "slipping stations" (a station other than crew base where rest facilities are provided for rest between duty periods) to be a minimum of 10 hours

and at crew base 12 hours, except when flight returns between 00h01 and 08h00, when the minimum time shall be 18 hours.

- No more than six consecutive days of duties to be scheduled unless one day is standby, when such becomes seven days. Such scheduled duties shall be followed by at least two consecutive duty free days.
- Maximum period on standby is eight hours.

The parameters for the international crew vary with regard to duty periods (16 to 18 hours), rest periods (20 hours), standby periods (6 hours) and such details, in accordance with both the airline and CAs needs.

The work schedules for both sets of crew are rostered according to a 'block system', ideally encompassing a 20-to 24-week period of time, with such schedules being available to the CA three weeks prior to commencement of the block. The schedules of domestic crew and the combinations of flights are determined by a computer, following which the roster clerks assign crews to the combinations. Rosters are, however, subject to changes as required in accordance with timetable changes effected from time to time.

While international crews' rosters operate in accordance with the same basic principles, they are not computerised, but worked out manually. The majority of CAs are scheduled

on a set roster, per block, in accordance with the principles outlined above. There are, however, reserve crews (called 'float crews') scheduled who are not allocated fixed flights on the block but whom phone in daily and are utilised as required for back up when CAs scheduled for flight are absent due to leave, illness, absence without leave etc.

A meeting with the person responsible for the scheduling of such rosters revealed that it is not the SAA's policy to have CAs work on their maximum duty hours and minimum rest periods as per the agreement. On the contrary, it is attempted to restrict duty hours to eight hours and to return CAs to domicile as soon as possible. Furthermore, CAs can request flights and arrange alternatives as feasible, by dealing with their assigned roster clerks.

In more theoretical terms, the work schedule system of the CA represents what has been called a continuous, swiftly rotating, non-routine shift system. In terms of the requirements placed on the CAs, the work schedules are fairly unique to the airline type of environment, hence presenting fairly unique problems and advantages.

WORK SCHEDULE STRESS

As suggested earlier, the experiences and reactions of

the CAs are diverse, and vary according to various personal and situational dimensions. Given the inevitable presence of extremes on either side, clearly identifiable trends did, however, emerge and these will be discussed within the structure of Strümpfer's (1983, 1985) model, as outlined in Chapter 2. Before moving to this, it is important to note that, whilst there are both positive and negative aspects of the work schedules, in the main work schedules were reported to represent quite a high level of stress; in fact, they emerged as one of the major stressors of CAs. Such experience can, however, only be fully understood in context, as will be outlined below, in discussing the major trends which emerged in the qualitative analysis of the components of work schedule stress.

Cultural Antecedents

Cultural antecedents that affect all members of a culture can, obviously, not be addressed here, but three patterns which belong under this heading emerged quite clearly as contributors to CAs' stress experiences.

One of the most influential antecedents emerging from the qualitative analysis was the fact that our society is, in the main, geared toward weekday work, primarily five or five and a half days, "8 to 5", with weekends off. Consequently, social activities, sporting events and such

community related events are primarily scheduled for weekends. This fact of cultural life presented itself as having important impact on the CAs, with many reporting their situation as "abnormal" and regarding themselves as being "out of synch" with society.

A second cultural antecedent was the still fairly traditional orientation of society with regard to the role of females as the caregiver, as the wife and mother, a role not congruent with the job of a CA. Some CAs, in fact, verbalised pressure which they experienced from parents in this respect, with regard to the need to get a "normal job", "settle down", get married and have children. Such pressures are reportedly experienced mostly by CAs from about age twenty-five upwards. Obviously, this role stereotype is important with respect to general experiences of stress. However, it will reinforce the tendency to reject the demands of work schedules in particular. Significant others, as well as the CA herself, are likely to consider such demands as "unnatural" and contrary to the social role stereotypically expected of her.

A third antecedent that emerged as important was the overall high level of education of the CAs. In this respect, the majority (estimated as high as 90%) possessed some form of post-high-school qualification, in the form of either a degree or diploma. The range of fields of such

qualifications was diverse; examples were diplomas in beauty therapy, secretarial courses, and university degrees in psychology, law, microbiology and teaching, to name but a few. The duration of such post-high-school qualifications ranged from one year diplomas to post-graduate degrees. Obviously, the majority of these qualifications are not related to the work of CAs. Furthermore, the majority of CAs have worked a minimum of one year before joining SAA - a feature consequent to the prior age restriction of 21 for eligibility to become a CA. The consequence is a highly educated and experienced but consequently also fairly ambitious group of persons. To the extent that their levels of education and outside experience were salient to them but not engaged by their work, these constituted a basis of frustration or even distress. The implications are serious for work schedule stress, in particular. In this country, people with relatively high educational levels, and with the kind of work experience that typically follows after such education, usually do not do shift work. Social expectations, (as well as their own expectations for themselves) are likely to be that such persons should work "office hours" and have a certain degree of latitude to decide about working times. Chances are, therefore, that they will find shift work schedules even more onerous than less well educated people.

Organisational Stressors

Conceptualising experiences within a wholistic, systems framework leads one to conclude that 'everything affects everything'. The qualitative analysis revealed diverse stressors to be inherent in the job of CAs. These stresses of the job as reported were classified into broad categories as are outlined in Appendix F. A further major category of stress deserving mention is the extensive anomalies with which the CAs are faced in performing their daily duties. A list of these anomalies is contained in Appendix G. A mere cursory glance at Appendices F and G and the range of stressors contained in them, suggests that these factors will have impact on the work schedule stress experience of the CA. Indeed, the qualitative analysis supported such suggestions. In this vein, certain stressors such as the constant pressure against time, the "system", delays and the physically demanding aspect of the job, for example, were shown to compound the experience of work schedule stress. The major culprit emerged as being "the system" and, therefore, it merits attention at this stage.

The "system" within which the CA operates, i.e. SAA and its climate, are perceived as bureaucratic, rigid and unsupportive. These experiences lead to perceptions of helplessness and lack of channels to express grievances and/or

problems. These perceptions, in turn, result in high levels of stress experience. For example, a CA requiring time off to attend to personal business, perceives herself as being solely at the mercy of the roster clerks, with no alternative source of sympathetic hearing or sources of support. Perceived managerial philosophy of "if you don't like it leave" enhance frustrations with regard to work schedule matters. It increases perceptions of "we keep giving, getting nothing in return", clearly rather self-defeating perceptions for any organisation to foster. Frustrating difficulties in negotiating leave were shown to enhance the temptation to take absence without leave. All in all, the "system" was characterised as an important contributor to experiences of work schedule stress, since work schedules were perceived to be inhumane and not flexible enough to accommodate personal needs and traits.

Other compounding influences which merit specific mention are delays and the constant pressure against time. Delays were reported by the CAs to be frustrating and tiring due to the fact that they both extend duty time and that with delays, passengers become increasingly irate and demanding in their requirements and moods. The constant pressure against time with which CAs are faced is most apparent on short-haul "service" flights and is increased with delays and consequent lack of preparation time before passengers board flights.

Furthermore, time involved in getting to and from work was reported to result in additional stress being experienced. Many of the CAs live on the East Rand, and thus fairly close to the airport. However, the airport remains fairly remote in location and particularly those CAs residing in Pretoria and the Northern Suburbs of Johannesburg, as many do, certainly face extensive distances and travelling time to and from work. A similar situation exists for the Cape Town based crew. In both cases this travelling time was reported as an additional factor contributing to fatigue.

Reactions

The reported reactions to work schedule stress, both immediate and long-term, were diverse and varied in accordance with individual traits, such as individuals' stress thresholds and situational characteristics. A discussion of the reactions to work schedule stress necessitates an outline of the major facets, as reported in the interviews conducted.

In the first instance, various roster-related issues were reported as stressful by the CAs. The issue eliciting the strongest reaction in this regard was the fact of the schedules being organised by computer, "by the book", with

humane factors perceived not to be taken into account. The roster clerks were perceived as being unsympathetic to CAs' needs, inconsistent and open to bribes. These features, coupled with the fact of rosters being subject to frequent and "arbitrary" changes, led to feelings, as stated by a CA, that "The SAA tried to get the maximum out of us while giving minimum in return."

A more direct roster-related issue reported as stressful was the frequent long hours, at times involving as long as 10 hours on duty, and demanding flight combinations to which CAs are subjected. CAs reported the schedules as demonstrating a lack of balance between "rest periods" and "duty periods". This fact was compounded by the belief that the actual experience of flying "takes a lot out of you" and, in fact, is believed to be more strenuous and demanding than working similar hours in an office-related environment, or in a "normal job". The early morning and midnight flights were reported as exceptionally demanding, a "shock to your system." As suggested earlier, leave was reported as a frequent problem, since it is frequently refused and/or cancelled at the last minute, leaving CAs frustrated and dissatisfied.

The necessity of weekend work and "peak time flying" elicited a diverse range of reactions. On the whole, neither of those were enjoyed, despite their acceptance as

part of the job. A feature eliciting a particularly negative response to these two requirements was the lack of a system for ensuring equity, for example, perhaps one weekend off in every four or Christmas on, New Year off; additionally there was the overall perceived lack of fairness and consistency involved in rostering weekend and peak-period work. Similar reactions were reported regarding overtime. Once again, a lack of consistency was reported, with some CAs working what they regarded as excessive overtime and others not being required to work any overtime at all. Reactions to overtime were also diverse, with moderate levels being enjoyed due to the financial gain, but "excessive overtime" reported as very tiring. Reactions to weekend work, peak-period flying and overtime obviously varied in accordance with the demands placed upon the CA concerned in this regard. The primarily negative reactions to these aspects of the work schedules were reportedly inextricably related to the fact of society being orientated to weekends and peak periods off. These are times when others socialise and the necessity of working at such times elicited diverse reactions, as referred to above, with consequences as shall be discussed further below.

The necessity and experience of working standby was reported as "frustrating", "boring" and "tiring". Whilst perceived as a "waste of time", standby duties were also reported as unsettling due to the consequent inability of

CAs to plan ahead. Feelings of "dreading being 'caught out' on standby" were generally expressed. Similar reactions to float duties were reported. These float duties refer to the times when the CA is used as reserve crew and as such not allocated fixed flights but utilised as required for back-up when CAs scheduled for flights are absent for whatever reason. CAs perceived the lack of certainty and inability to plan at all, even for necessary activities such as dentist appointments, as being extremely demanding.

The various facets of work schedule stress as outlined above elicited feelings like those verbalised by one CA: "I never seem to be at the right place at the right time. I am always going to work when others are coming home or enjoying weekends. It never seems to work out that you're at home when something happens." Another said, "They (work schedules) lead to lots of pressure in day-to-day life, for example getting up early, flying eight hours and then getting home and being expected to cook and conform to 8 to 5 norms." CAs interviewed frequently perceived work schedules negatively, as is obvious in some of the comments expressed, viz.

... work schedules affect everything ...

... you can get so tired, you don't feel like going further ... no morale left by the end of the day ...

... it is so tiring, sometimes we just fly, fly, fly,

... there is no glamour to that ... it just affects your social life.

... there are times when I think I can't cope ... I get so tired ... and there's another 'leg' to go.

On the other side of the coin, all is not perceived to be bad with regards the work schedules. On the contrary, the CAs reported various aspects of the schedules in a positive light, although the positive aspects were by no means perceived to outweigh or even counterbalance the adverse effects. Such positive aspects of the work schedules included the lack of routine, i.e. not being required to get up at the same time everyday. Furthermore, the schedules were frequently perceived as more time at home than is possible for the person working '8 to 5'; e.g. CAs sometimes finish duty for the day by 10.00 a.m. The schedules were also perceived to facilitate a 'freedom' of lifestyle with additional time available to CAs to pursue hobbies, etc. Some of these 'positives' unfortunately have their negative counterparts. For instance, time off when others are working facilitates getting chores done, such as shopping "away from crowds", not having to drive in peak-hour traffic etc., yet the negative side is the loneliness, lack of company and inability to socialise during these periods. The important point is that there are indeed positive aspects to the work schedules worked by the CAs.

To conclude this section, it is obvious that the reactions to the work schedule stress are diverse, many of which present themselves as being cumulative over time and having diverse consequences as outlined below.

Consequences

A wide variety of consequences, or "strains" (Strümpfer, 1983) of work schedule stress, both short-term and long-term were described by participants. Adopting Strümpfer's (1985) distinction between physical and psychological consequences proved useful in the report.

Physical Consequences

With regard to physical consequences, the most frequently reported was fatigue, which ranged from occasional feelings of tiredness to an overwhelming sense of exhaustion. Indeed, a noticeable majority reported feeling some level of tiredness, a consequence generally described as being cumulative, and consequent to a number of factors, both work-schedule related and otherwise. More specifically, fatigue was reported as being related to the non-routine nature of the work schedules and the subsequent disruptive effect on sleeping patterns. The effects of the unusual scheduling of hours was reported as especially pertinent with regard to night time flights, particularly

midnight and early morning flights. Consequential issues reported included the inability of the body to adjust immediately to such schedules, and the cumulative effects of such lack of adjustment. Furthermore, inadequate sleep, in terms of both quality and quantity, was frequently reported. Such inadequate sleep was related to the inability of the CAs to be able to sleep anytime, even if rest periods are scheduled, a feature related to being "hyped up" after a flight, and the inability to "sleep anywhere" as would be required on over-night stops. The fatigue-exhaustion continuum thus represents an important consequence of work schedule stress, ranging from "feeling tired" in the short term, to "building up" in the longer term, to "being so exhausted, I feel like I can't cope" or "I've just run out of energy". As mentioned, a sizeable majority of CAs reported feelings of tiredness at minimum as a consequence of work schedule stress. Many CAs, particularly longer term employees reporting cumulative effects and having experienced periods when they felt excessive fatigue, to the point where they found it necessary to take sick leave or annual leave, as a means to redress the situation and facilitate "energy restoration".

A range of other physical disorders which CAs perceived to be related to the unusual and long hours of the work schedules were also reported. Once again, the seriousness of these ranged from mild disorders in the short term,

to what could be described as "diseases of adaptation" (Selye, 1982), in the long term. The reported disorders included headaches, migraines, backache, "shoulder tension", enhanced level of susceptibility to colds and influenza, blood pressure problems, indigestion, stomach pains and disorders and insomnia. Many CAs reported these physical consequences to have been present most acutely in the "early days" of their flying careers, with gradual adjustment demonstrated with time. Menstrual problems were frequently reported and related to "hormones being turned upside down". Problems with hair, skin and nails being in an inferior condition were numerous and related to the "inability of the body to adjust to the abnormal hours and flying itself". Furthermore, many of the CAs regarded themselves as physically unfit and the overwhelming majority perceived themselves to be less than healthy. Once again, while these consequences are believed to be related to a wider range of work stressors inherent in the job, the data also demonstrated clearly that work schedules played a large contributory role.

Obviously, CAs personal reports on their health cannot substitute for medical evidence of ill-health. Particularly, their assumptions about causation cannot be accepted as necessarily final. From a psychological point of view, however, perceptions are of the greatest importance. These complaints are likely to have at least

some basis in physical reality, but it is their psychological reality that should be considered seriously in the present context.

Psychological Consequences

With regard to psychological consequences of work schedule stress, there was evidence of both emotional and cognitive strain. Emotional strain was frequently reported in the form of irritability, quick temperedness and general feelings of being "uptight". Furthermore, negative self-perceptions, were evident, particularly in those experiencing sleep-related problems, for instance, with regard to inability to cope and a feeling that "everything seems to get on top of me". Feelings of loneliness, of being "out of touch" as well as depressed mood, also emerged as significant consequences of work schedule stress. Pessimistic orientations and perceptions of "everything going wrong" accompanied by aggressive thought patterns were evident in those experiencing high levels of work schedule stress. Evidence of cognitive strain presented itself in certain CAs having difficulty concentrating, finding words and forming sentences. Finally, whilst the majority reported relatively minor work-related problems, such as those outlined above, some reported far more serious consequences, such as having experienced or being on the verge of a "nervous breakdown".

Taking both psychological and physical consequences into account, work schedule stress emerged as having distinct influence on the overall wellness of CAs, with those experiencing high levels of stress certainly reporting to be less well than those for whom the work schedules were less stressful.

Social Consequences

Social consequences related to work schedule stress were also reported, for instance difficulties with regard to relationships, as well as with regard to sports or hobbies and out-of-work activities. Firstly, concerning relationships, the majority of CAs reported their work schedules to place additional demands on them in terms of effort required to maintain meaningful relationships with spouses, friends and family. Indeed, many reported declining social activity, loss of contact with friends outside the airline, perceptions of lack of understanding by husbands, friends and family, as well as consequent feelings of isolation, loneliness and sometimes withdrawal, as referred to in the discussion of psychological strain. Secondly, with regard to avocational activities, many CAs reported a decline as a consequence of their unusual hours and schedules and difficulty in "fitting everything in". Team-oriented and competitive sports, such as tennis or

hockey, were perceived as generally not possible, as were activities involving regular lessons, e.g. music. In the main, the CAs reported the only feasible activities to be individualised sports and hobbies such as jogging, horse riding, reading, sewing and cycling. As a consequence, some reported strong feelings of emptiness and lack of external stimulation.

Conditioning Variables

The qualitative analysis revealed a definite trend for two variables, i.e. potency and perception of social support, to condition or moderate the relationship between work schedule stress and wellness, and these will be discussed separately below.

Potency

The qualitative analysis revealed a certain combination of characteristics, an attitude to life, as playing a vital role in moderating the effect of work schedule stress on wellness. Indeed, these characteristic emerged as being far more than a personality trait. It incorporated a positive attitude to life, one of realistic optimism, a belief of the possibility of determining one's own fate, and being in control of one's own life and destiny, as well as the possession and use of resources, both personal and

situational, to do so. Such resources include persistence, tenacity, flexibility, resourcefulness, interpersonal skills, the ability to take life's knocks and "bounce back", the way in which use is made of social support, a sense of humour and a realistic orientation to life. It seems to be a matter of believing in oneself while being exposed to life's stressors. It also includes a belief in one's ability to "make the difference", and perhaps attempt to "get the most out of a less than perfect situation", as opposed to just accepting such as one's "dues" in life. Indications of such attitudes were found in comments made by the CAs in the interview such as:

... it's your attitude that determines your experience ...

... if you want to make time for it, you will ... there is time for everything you want there to be time for ...

... you need to know yourself and when to draw the line ...

... its a matter of finding a system that works for you, and getting as much use out of the system and doing your job well ... then you will be personally satisfied.

On the basis of the literature search, it is suggested that this set of attitudes closely resemble what has been described by Ben-Sira (1985) as "potency" and by Antonovsky (1979, 1984) as "sense of coherence". The components revealed in the above analysis closely resemble the components of potency as outlined in the definition quoted earlier, the most central being "an underlying basic sense of confidence in one's ability to overcome the demands of life" (Ben-Sira, 1985, p.399). An important dimension of potency is the fact that it is not responsible for alleviating the stress experience of work-schedules and by no means implies that individuals with high levels of potency do not experience stress. On the contrary, the stress experienced is the same; potency merely implies an orientation geared toward coping and "making it happen" as opposed to "allowing it to happen to you". Individual CAS with such an orientation reported to know how to "play the system"; developed "helpful" contact relationships, perhaps ignored other less-important issues, and generally geared themselves toward controlling their own life, as opposed to letting the airline enjoy such a privilege. Whilst not being able to claim the majority, a large proportion of those interviewed exhibited fairly high levels of potency. The important point is that this set of attitudes is clearly linked to lower levels of adverse stress-related consequences being experienced.

This variable, as described, is believed to be adequately encapsulated in Ben-Sira's (1985) Potency Scale, to which will be returned in the quantitative analysis.

Social Support

A further variable emerging strongly in the qualitative analysis to perform a moderating role between work schedule stress and wellness related to relationships and the perception of existing within a supportive network. CAs reported "having someone to turn to", "people who care", "someone you can confide in and let off steam to" as being important to their wellbeing. The variable is posed as being similar to that referred to in the literature as "social support" (e.g. Cobb; 1976; House 1981, 1983). The perceived level of supports varied extensively among CAs. However, a strong trend emerged demonstrating higher levels of support to be strongly associated with a higher level of "wellness", or generalised wellbeing.

The analysis revealed five sources of social support to be important to the CAs, i.e. managerial, supervisory, co-workers, spouse and friends/family. The relative importance of each source varied in accordance with the individual and the situation in question. Both the quality and the quantity of social support emerged as important,

with the former being most important. Indeed, certain distinct trends emerged with regard to social support and its various categories which warrant further discussion.

Managerial Support

As suggested earlier in the report, CAs made a clear perceptual distinction between management and supervisors as their superiors. Management is represented by those based at Jan Smuts or D.F. Malan airports respectively, and supervisors are those supervisors who actively fly, i.e. cabin controllers, flight service officers etc.

With regard to relationships with and a perceived support from managers, an overwhelming perception of receiving little or no support from managers was evident. In fact, CAs perceived such a minimal contact with management as occurring generally only if something was wrong, for instance when a CA was called in to explain a customer complaint (referred to as a "please explain") or to be disciplined. Whilst the CAs usually reported to know the names of managers, very few CAs reported actually knowing any managers themselves. Responses to the questions regarding relationships with management included:

"They're up there ... distant You only get to see them when you're called in on 'a please explain'."

"You only get to management if you're really in trouble or have a grave problem."

"I get the feeling you can't really talk to them."

"They always look on the dim side. They never praise."

"They don't really know what's going on."

"It's a matter of them ... and us."

The response to such perceived lack of managerial support ranged from feelings of frustration and anger to acceptance with a shrug. In the main, however, these responses showed distinct links to raised levels of scepticism, pessimism, low morale, perceptions of "being come down upon", all indicators of less than adequate psychological wellbeing.

Supervisory Support

Perceptions of support levels from supervisors varied. Crew flying Boeing 737s reported substantially higher perceived levels of supervisory support than those flying Airbuses. This is due to there being fewer crew on Boeing 737s and subsequently a closer relationship between the crew themselves, as well as between the crew and their supervisors, facilitated by such constant contact. In the main, a fair level of support was perceived from supervisors, particularly if required to back up the CA when confronted with difficult passengers and other problems

arising while on duty. A reciprocal respect or support from the CAs to supervisors was certainly not always evident, with many expressing reservations with regard to the supervisors' competence and merit to hold such authority. In general, however, managerial and supervisory support were reported as potentially buffering the effects of work schedule stress via providing an alternative or even simply a channel of hearing when problems arise.

A brief mention of the flight deck personnel is also pertinent. While flight deck personnel are senior in the hierarchy and as such possess potential power, they have little direct authority over the CAs, apart from the captain whom is the "responsible person" on the aircraft. The flight deck do, however, represent significant persons, as reported by the CAs. Indeed, high levels of support are perceived to exist from the captains, particularly in adverse circumstances, when they have, for instance, been known to offload difficult passengers. The rest of the flight deck are, however, frequently reported as "officious", expecting unreasonable service etc., all of which have an adverse impact on the CAs self-esteem and general psychological wellbeing.

Other Cabin Staff/Colleagues

On the whole, support from peers emerged as high, with

CAs reporting cabin crew to be very "closeknit" and supportive of each other while flying. "We always stand together while on the aircraft", summed it up. Boeing 737 crew, in particular, reported the development of close friendships between crew, as many of them have flown together as a team for an extended period of time, some for as long as two years. Other CAs fly with a friend, perhaps even a husband, a feature which certainly enhanced the perception of support at work.

There is, however, a strong sense among many CAs of such support being superficial and tentative. In fact, some view it as only extending to "flying friendships", with a generally high level of pettiness, backbiting and malicious rumour spreading existing "in reality".

Nevertheless, CAs generally recognised that it is necessary to develop support groups on the aircraft, a view supported by comments like: "If you're 'in', you're fine ... if not, it's awful"; and "Personality clashes affect the flight severely". The consequences of such anomalies in this support system ranged from indifferent acceptance, to high levels of frustration and disillusionment, possibly arising from frustrated needs for intimacy and meaningful social relationships.

Work-related sources of support thus were, in general,

perceived by CAs to be important. In particular, peers provide understanding of the problem at minimum as a consequence of undergoing similar experiences. Understandably, lack of such support can have potentially extreme consequences on the wellness of CAs.

Friend, Family, and Spouse Support

These sources of support represent three distinct categories, each with varying degrees of significance in accordance with the context or circumstances of the individual. They are, nevertheless, discussed together since they represent "out of work" sources of support. Diverse levels of such support were reported and certainly featured significantly in relation to wellbeing of the CA. Generally, high levels of external support were regarded as being important, particularly since it made it easier to handle work schedules.

Firstly, with regard to friends, it is possibly easier to stick to SAA friends, due to, particularly, work schedule related problems, which make it difficult to maintain meaningful outside friendships. Numerous CAs, however, reported that airline people are not always the people they would choose to socialise with, and therefore a preference "to be with people that I choose, not just what is available." Such outside friends are important sources of

support in their being confidantes, alternative stimulation, a means to unwind and get "away from it all". Levels of support from friends varied but there seemed to be a distinct relationship between high quality support and wellness. Similar comments could be made about familial support.

Support from the spouse or partner emerged as a very crucial determinant of wellbeing. Among those who had husbands or partners, it seemed as if only about half enjoyed high levels of support. High support from this source was reported to facilitate "winding down", subsequent energy restoration, regaining of perspectives, a channel for emotional off-loading, etc., all aspects leading to a perception of being socially involved and accepted, and of leading a meaningful, high-quality life. On the other hand, lack of such support poses an additional stressor and was reported as being frequently based on lack of understanding, insecurity and/or jealousy. Such lack of support leads to lowered levels of wellbeing, as evidenced in feelings of guilt, lowered self-esteem, lessened perception of meaning in life, perceptions of inability to cope, anxiety and anger. In general, higher levels of support was generally reported to be generated by partners who also worked in the SAA, or otherwise are engaged in activities which lead them to follow unusual hours themselves.

In conclusion, social support or the perception thereof, emerged in the qualitative analysis as being highly related to perceptions of self, self-image, social meaningfulness and quality of life, and in fact to the overall wellbeing of the CA.

Coping

The coping techniques engaged by CAs as a means of dealing with organisational stress and, for present purposes, work schedule stress were diverse, including both regressive and transformational coping (Strumpfer, 1983). The descriptions below deal with general coping techniques, since these are effective in dealing with work schedule stress, in particular, too.

Firstly, with regard to regressive coping, CAs experiencing high levels of work schedule stress frequently reported activities such as smoking, or having a drink every evening to "calm me down", as their "crutch" for dealing with stress. Furthermore, there seemed to be a high level of activities, such as excessive drinking, smoking of dagga and possibly pill consumption amongst CAs. The activities were usually reported as the activities of "others", rather than of the CA herself. Such lack of direct reporting is understandable since the activities mentioned are less than socially acceptable; still, the high levels of indirect

reporting seem of significance.

Still in the category of regressive coping are forms of withdrawals as adaptation to work (Rosse & Hulin, 1985). Most prominent was absenteeism, in the form of "taking time off sick" when "things get on top of me" or as a means of getting time off for special occasions such as weddings or birthdays when the person believed that it could not be obtained through official channels. A high level of intention to leave the organisation was a form of psychological withdrawal that was reported less than infrequently. Actual turnover could, however, not be investigated.

A broad range of transformational coping was exhibited by the CAs. Firstly, many reported adopting health-enhancement strategies such as regular exercise programmes. Exercise routines are frequently self-monitored and include individual-orientated sporting activities such as swimming, cycling, and jogging. Such activities are complemented by ensuring healthy meals, drinking a lot of water and general care of oneself, including beauty routine efforts, ensuring adequate sleep etc. These health-enhancing activities seemed to go hand-in-hand with a high sense of potency and was reported to involve planning ahead, being organised, and generally "relying on yourself, not on others".

Another technique of transformational coping could be referred to as the use of rational-emotive thinking. Some CAs reported that they engaged a frame of mind of determination "not to let things get them down", not to take things either seriously or personally, but to tell themselves to "calm down ... let it pass." Some CAs rely heavily on religion as a philosophical means to assist coping. Many CAs are engaged in extra studying, such as language study or studies related to previous qualifications, as a means of facilitating mental stimulation and of overcoming the lack of stimulation experienced at work. Subtle, proactive techniques of control over the passenger have also been reported, described as "giving off vibes" and "keeping yourself together". Others set themselves challenges such as finding out one thing about, say, five passengers each flight, as a means of making their days more interesting.

To conclude, CAs reported a wide range of techniques of coping. A rough distinction could be made between the "copers" and "non-copers". The "copers" presented themselves to have a broad repertoire of skills at their disposal and the ability to engage in coping activities in a proactive manner. The qualitative analysis also suggested such "coping orientations" to be linked to high levels of potency and social support, as well as subsequent general

wellness.

CONCLUSION

To conclude the qualitative analysis, there are a few general points to be made. Firstly, certain CAs who enjoy the work schedules, admit to doing so as they are utilising the schedules as a means of escape from less than pleasant home conditions; by being away, they are not required to confront such matters and to resolve them, as the unusual hours facilitate avoidance of contact with the petulant husband or overbearing mother, etc. Furthermore, while many stresses are inherent in the job of CAs, all is not lost, for the CAs themselves represent a group with a high level of skills in multiple areas, with high levels of, at least, potential motivation, all of which the organizational system is overlooking and sometimes destroying.

Finally, an overview of the situation of international crew revealed a picture rather similar to that of the domestic crew with regard to perceptions, frustrations etc., although the specific facets of their work schedules varied somewhat. Certain problems, for instance, the issue of being away, in a foreign country, alone, away from home, etc., differed in finer details but the broad picture remained the same.

CHAPTER 5

QUANTITATIVE RESULTS

As outlined earlier, the quantitative analysis was conducted in two phases, i.e. descriptive statistics, followed by subgroup analysis. The subgroup analysis was conducted in an attempt to assess the moderating influence of the variables of Potency, Trait Anxiety, Trait Anger, and Social Support on the consequences of Wellness, Exhaustion, Depression, Somatic Complaints, General Health and Propensity to Leave. The results will be reported within this structure. As indicated in Chapter 3, the data were obtained by means of a Self-description Inventory handed to CAs and supplemented by ratings for Social Support I and Wellness based on the interview data. As mentioned in Chapter 3, the sample used in this phase of the research consisted of 75 CAs on the domestic service who had returned completed questionnaires.

DESCRIPTIVE STATISTICS

The sample was diverse with regard to biographical characteristics. Age varied between 22 and 38, with the majority of CAs falling into the below 30 age group, and the average age being approximately 26. The majority of the sample were single, although there was a representation of engaged and married individuals, and some of the single CAs

were cohabiting with a partner and had been living 'as married' for some time. The majority of CAs had no children. Length of service ranged between 3 and 13 years, the average being approximately 5 years.

Table 1 presents the means and standard deviations of age, length of service, the questionnaire scales, as well as the Social Support I and Wellness ratings.

Table 1 also shows Cronbach alpha reliability coefficients where appropriate. The coefficient alpha indicates an upper limit to reliability. If it proves to be very low, the interpretation is that either the test is too short or the items in the test demonstrate low levels of internal consistency. The alpha coefficients displayed in Table 1 indicate that all the scales used showed moderate to high levels of internal consistency.

Table 1

Means, Standard Deviations and Reliabilities of Variables

Variable	Mean	SD	Alpha
1. Age	25,87	3,04	-
2. Length of Service	4,64	1,92	-
3. Work Schedule Stress	90,48	19,51	0,93
4. Potency	84,52	11,52	0,84
5. Trait Anxiety	32,57	5,03	0,85
6. Trait Anger	29,24	4,91	0,81
7. Social Support I	11,05	2,99	0,69
8. Social Support II	7,21	4,30	-
9. Wellness	9,52	3,49	0,90
10. General Health	3,81	1,98	-
11. Somatic Complaints	2,81	2,31	0,70
12. Exhaustion	10,07	3,66	0,84
13. Depression	1,43	1,87	0,78
14. Smoking	4,91	8,70	-
15. Drinking	17,45	18,64	-
16. Pill Consumption	0,49	1,82	-
17. Propensity to Leave	8,36	2,31	0,69

PRODUCT-MOMENT CORRELATIONS

Biographical Variables

The two biographical variables of Age and Length of Service were not entered into the subsequent subgroup analyses and correlational data for these were excluded from Table 3 to save space. As could be expected, they showed a highly significant correlation with each other: $r = 0.58$, $p < 0.001$.

Age showed $r = -0.24$, $p < 0.05$ with Work Schedule Stress, which implied that the younger a CA was, the more likely she was to experience distress from work schedules. However, it is also likely that among the older CAs, some of whom had longer service, there was a higher proportion of survivors who found the work schedules less distressful. It is likely that some CAs who had experienced difficulty in handling work schedule distress in the past had resigned, leaving the sample more and more biased as one moved toward the older end of the age distribution.

Age also showed a significant correlation with Wellness: $r = 0.28$, $p < 0.05$, implying greater wellness with increased age. However, this correlation, too, may reflect an element of the survivor interpretation mentioned above.

Lastly, age showed a significantly negative correlation

with Exhaustion: $r = -0.26$, $p < 0.05$, implying lower levels of exhaustion with increasing age, once again suggesting support for the survivor interpretation mentioned for the two other correlation coefficients.

Length of Service showed only one significant correlation: $r = 0.58$, $p < 0.05$, with smoking. If selective survival enters into Length of Service, Smoking may be a crutch which survivors rely on more heavily than persons with shorter service.

No other correlation coefficients between Age and Length of Service reached conventional levels of significance.

Psychological Variables

Product-moment correlation coefficients between the variables obtained from the Self-description Inventory, as well as the Social Support I and Wellness ratings are presented in Table 2. These present an initial indication of relationships. Furthermore, as Vaux and Anthanassopoulou (1987) pointed out, such bivariate analyses allow comparison to other studies using the same instruments. Some comments on Table 3 will be made, under the headings of the three groups of variables included. Note that on Trait Anxiety, Trait Anger, General Health and Propensity to Leave, high scores indicate low levels of the variable, a feature which

influences interpretation of the correlation coefficients.

Work Schedule Stress

As can be seen from Table 2, the Work Schedule Stress Scale showed significant correlations with 12 of the 14 remaining variables. Only Smoking and Drinking were exceptions. Some of these coefficients were very high, for instance 0.73 with Exhaustion; -0.64 with Wellness; -0.61 with Trait Anxiety and 0.58 with Somatic Complaints. The coefficients thus suggest that CAs experiencing high levels of Work Schedule Stress would demonstrate higher levels of mental strain or Exhaustion and lower overall Wellness than CAs low on Work Schedule Stress. Furthermore, those high on work schedule stress appear to demonstrate higher levels of both Trait Anxiety and Somatic Complaints. The slightly lower, although still significant correlations between Work Schedule Stress and the remaining variables suggest those CAs experiencing distress from work schedules are more likely to demonstrate Propensity to Leave, exhibit lower levels of Potency, experience high levels of Depression and perceive themselves as enjoying lower levels of General Health than their counterparts who experience low levels of Work Schedule Stress. Finally, those high on Work Schedule Stress are suggested to enjoy lower levels of Social Support, both qualitative and quantitative, and demonstrate higher levels of Trait Anger. Certainly, the overall

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1 Work schedule stress	—														
<u>Moderators:</u>															
2 Potency	-.47 ^c	—													
3 Trait anxiety	-.61 ^c	.53 ^c	—												
4 Trait anger	-.30 ^b	.16 ^b	.33 ^b	—											
5 Social support 1	-.37 ^c	.31 ^b	.40 ^c	.11	—										
6 Social support 2	-.27 ^a	.15	.12	-.05	.09	—									
<u>Consequences:</u>															
7 Wellness	-.64 ^c	.37 ^c	.54 ^c	.16	-.46 ^c	.25 ^a	—								
8 General health	-.41 ^c	-.31 ^b	-.42 ^c	-.08	-.33 ^b	-.26 ^a	-.46 ^c	—							
9 Somatic complaints	.58 ^c	-.32 ^b	-.44 ^c	-.03	-.53 ^c	-.24 ^a	-.50 ^c	.48 ^c	—						
10 Exhaustion	.73 ^c	-.53 ^c	-.50 ^c	-.25 ^a	-.23 ^a	-.17	-.46 ^c	.24 ^a	.40 ^c	—					
11 Depression	.42	-.41 ^c	-.35 ^b	.02	-.29 ^b	-.17	-.35 ^b	.42 ^c	.50 ^c	.39 ^c	—				
12 Smoking	-.04	-.07	-.09	.03	.04	-.10	.04	.01	-.06	.00	.05	—			
13 Drinking	-.07	.15	.01	.00	.03	.12	-.03	-.05	.01	-.11	.01	.30 ^b	—		
14 Pill Consumption	.23 ^a	-.12	-.19	-.10	.02	-.14	-.22	.16	.21	.18	.14	-.03	.16	—	
15 Propensity to leave	-.48 ^c	.38 ^c	.15	.11	.23 ^a	.01	.39 ^c	-.13	-.23 ^a	-.48 ^c	-.22	.10	.06	-.05	—

^a : $p < .05$ ($r \geq .23$)

^b : $p < .01$ ($r \geq .29$)

^c : $p < .001$ ($r \geq .37$)

Note: On trait anxiety, trait anger, general health and propensity to leave, high scores indicate low levels of the variable.

correlational analysis indicated that it was appropriate to continue with further analyses of these relationships.

Moderator Variables

Four of the coefficients between moderator variables were significant, viz. between Potency and Trait Anxiety; Social Support I and Trait Anxiety; Trait Anger and Trait Anxiety and between Social Support 1 and Potency. Ideally, the moderators should have been uncorrelated. At the same time these coefficients only represent, respectively 28%, 16%, 11% and 10% common variance between these variables ($r^2 \times 100$).

Significant correlations were, however, exhibited between the moderators and certain of the consequences. No significant correlations were demonstrated between any of the moderators and the consequences of Smoking, Drinking and Pill Consumption. Potency correlated significantly (at $p < .001$ level) with Wellness, Exhaustion, Depression and Propensity to Leave. The implication is that CAs exhibiting high levels of Potency are likely to enjoy higher levels of Wellness, lower levels of Exhaustion and Depression and demonstrate a higher Propensity to Leave than CAs with lower levels of Potency. Further significant, although slightly lower correlations were exhibited between Potency and both General Health and

Somatic Complaints ($p < .01$), suggesting that CAs with high levels of Potency experience a higher level of General Health and fewer Somatic Complaints than CAs with lower levels of Potency.

Trait Anxiety, correlated significantly at $p < .001$ level with Wellness, General Health, Somatic Complaints and Exhaustion and at $p < .01$ level with Depression. The implication of these results is that CAs exhibiting low levels of Trait Anxiety are likely to enjoy higher degrees of Wellness and General Health, fewer Somatic Complaints and lower levels of Exhaustion and Depression than CAs with higher Trait Anxiety.

Social Support I correlated significantly with Wellness and Somatic Complaints at $p < .001$ level; General Health and Depression at $p < .01$ level; and Exhaustion and Propensity to Leave at $p < .05$ level. The implication is that CAs enjoying perceived high levels of Social Support are likely to enjoy higher degrees of Wellness and General Health, less Somatic Complaints, lower levels of Exhaustion and Depression, and a higher Propensity to Leave than CAs with less perceived Social Support.

Trait Anger demonstrated no significant relationships with any of the consequences except with Exhaustion : $r = -.25$, $p < .05$. Social Support II, i.e. the quantitative

measure of Social Support exhibited significant correlations with General Health, Wellness and Somatic Complaints at only $p < .05$ level. These correlations suggest that the more close relationships a CA enjoys, the better General Health, the more Wellness and the lower levels of Somatic Complaints they are likely to experience.

Consequences

From Table 2 it is clear that the Wellness rating and four of the health-related self-report scales (Somatic Complaints, General Health, Exhaustion and Depression) were all quite highly inter-correlated. The three substance abuse variables were not related to the four, but Propensity to Leave again showed significant correlations to three of these four. In part, this degree of interrelatedness could have resulted from the heavy reliance on self-report data but the Wellness rating was obtained from qualitative data. These high intercorrelations will have to be considered in the interpretation of the results of the sub-group analyses.

It should also be noted that Smoking and Drinking showed a significant correlation. The consequences Smoking, Drinking and Pill Consumption demonstrated no significant relationship with the other consequences. As this lack of relationship applied to the moderators as well, these three consequences were omitted from further analyses.

SUB-GROUP ANALYSES

Investigation of moderator effects was carried out via sub-group analysis for the four moderator variables of Potency, Trait Anxiety, Trait Anger and Social Support I. In each case, the samples were split at the median and correlations calculated for each sub-sample between Work Schedule Stress and the six consequences of Wellness, General Health, Somatic Complaints, Exhaustion, Depression and Propensity to Leave. Using Fisher's Z transformation (Howell, 1987), significant differences between the correlations for the sub-samples indicated moderating effects of the moderator concerned. The results of the sub-group analyses are presented in Tables 3 to 6.

Significant Z values are those where $Z_{.025} = +1.96$. Tables 3 - 6 indicate that no significant Z values were found for any of the moderators. The implication is that none of the variables termed moderators exerted any moderating or buffering influence on the relationship between Work Schedule Stress and the consequences under investigation. The implied conclusion is that while these moderators exerted significant main effects on the consequences as suggested earlier in the discussion of correlational relationships, but the influence did not extend to buffering effects, thereby leading to rejection of Hypothesis 2.

Table 3

Correlation Coefficients between Work Schedule Stress and
Consequences for Sub-groups of Potency

Consequence	Subgroup (N)	r	r'	Z
Wellness	High (39)	-.581	.662	-0.129
	Low (36)	-.600	.693	N.S.
General Health	High (39)	.463	.504	1.228
	Low (36)	.204	.208	N.S.
Somatic Complaints	High (39)	.672	.811	1.801
	Low (36)	.358	.377	N.S.
Exhaustion	High (39)	.725	.918	0.834
	Low (36)	.615	.717	N.S.
Depression	High (39)	.305	.315	0.834
	Low (36)	.432	.460	N.S.
Propensity to Leave	High (39)	-.409	.436	0.124
	Low (36)	-.385	.406	N.S.

Table 4

Correlation Coefficients between Work Schedule Stress and
Consequences for Sub-groups of Trait Anxiety

Consequence	Subgroup (N)	r	r'	Z
Wellness	High (37)	-.558	.633	-0.261
	Low (38)	-.513	.570	N.S.
General Health	High (37)	.377	.394	0.531
	Low (38)	.262	.266	N.S.
Somatic Complaints	High (37)	.532	.590	-0.029
	Low (38)	.534	.597	N.S.
Exhaustion	High (37)	.683	.838	0.913
	Low (38)	.548	.618	N.S.
Depression	High (37)	.273	.282	-0.975
	Low (38)	.476	.517	N.S.
Propensity to Leave	High (37)	-.531	.590	1.232
	Low (38)	-.287	.293	N.S.

Table 5

Correlation Coefficients between Work Schedule Stress and
Consequences for Sub-groups of Trait Anger

Consequence	Subgroup (N)	r	r'	Z
Wellness	High (35)	-.601	.693	-0.643
	Low (40)	-.690	.848	N.S.
General Health	High (35)	.426	.454	0.320
	Low (40)	.361	.377	N.S.
Somatic Complaints	High (35)	.654	.784	-0.689
	Low (40)	.551	.618	N.S.
Exhaustion	High (35)	.674	.820	-0.365
	Low (40)	.718	.908	N.S.
Depression	High (35)	.427	.454	-0.394
	Low (40)	.499	.549	N.S.
Propensity to Leave	High (35)	-.389	.412	-0.656
	Low (40)	-.515	.570	N.S.

Table 6

Correlation Coefficients between Work Schedule Stress and
Consequences for Sub-groups of Social Support

Consequence	Subgroup (N)	r	r'	Z
Wellness	High (40)	-.597	.685	-0.062
	Low (35)	-.587	.670	N.S.
General Health	High (40)	.337	.348	-0.315
	Low (35)	.399-	.424	N.S.
Somatic Complaints	High (40)	.496	.543	-0.436
	Low (35)	.571	.648	N.S.
Exhaustion	High (40)	.710	.887	-0.220
	Low (35)	.735	.940	N.S.
Depression	High (40)	.284	.293	-1.149
	Low (35)	.514	.570	N.S.
Propensity to Leave	High (40)	-.555	.626	1.336
	Low (35)	-.294	.304	N.S.

CHAPTER 6
DISCUSSION

In this chapter, the results presented in Chapter 5 will be discussed in the context of their implications with regard to the research question outlined earlier. Major findings will be reviewed and discussed and explanations proposed in an attempt to facilitate insight into the significance of the results via combining the qualitative and quantitative facets. The results will be discussed against the broader framework of theoretical and empirical knowledge outlined in the literature review in Chapter 2. In conclusion, the current research will be critically assessed, with regard to its design and methodology, as well as its contribution to knowledge; suggestions for improvement will be made.

Firstly, with regard to Hypothesis I, the results, both qualitative and quantitative, provided substantial support for the hypothesis that work schedule stress was an important stressor for the CAs and was inversely related to their wellness. While it is dangerous to draw quantitative conclusions from qualitative results, the researcher gained the impression that the qualitative analysis reflected a higher level of work schedule stress than the quantitative results. An explanation may perhaps be that there were differences between the CAs who did return their

self-report inventories and those who did not, with both groups together constituting the sample for the qualitative phase. Telephonic inquiries made to those CAs who did not return their inventories elicited replies like: "I haven't had the time" and "Everything seems to be happening at once", which left an impression of greater harassment, stress or lower coping skills in this group. CAs who did return the forms may, in general, have been more effective in organising and planning, or other aspects of coping.

At this stage the various facets of work schedule stress as referred to in the research questions will not be outlined again. This is believed to have been adequately handled in Chapter 4. Suffice to say that, whilst there were positive aspects to the work schedules, these by no means counterbalanced the negative or stressful aspects. The major aspects of work schedules that were experienced as stressful were various roster-related and "system"-related issues, weekend work, overtime, flying at peak times, delays, being "on float" and on standby, as well as difficulties encountered in relationships, out of work time activities and health. In support of the first part of Hypothesis I, it is thus concluded that work schedules present a major source of stress for the CA.

With regard to the second part of Hypothesis I, i.e. the proposition that such work schedule stress is inversely

related to indicators of CA's health, both the qualitative and quantitative results provided high levels of support. Firstly, with regard to overall wellness, the qualitative research demonstrated a clear trend for those who experienced higher levels of work schedule stress to demonstrate lower levels of physiological, psychological and social wellbeing than those who experienced lower levels of work schedule stress. This observation was substantiated in the quantitative analysis. Furthermore, with regard to the specific facets of wellness, as measured, work schedule stress demonstrated a significant relationship with high levels of exhaustion, depression, psychosomatic complaints and low levels of general health. Given that these measures are indicators of psychological strain and physical health respectively which cumulatively constitute overall wellness as defined earlier, the results demonstrated extensive support for the hypothesis. Work schedule stress is thus posed to exert main effects on these indicators of wellness.

Referring to the definition of wellness as "the harmonious and productive balance of physical, mental and social well-being" (Kreitner, 1982, p.28), specific mention of social well-being is appropriate. The qualitative analysis certainly suggested work schedule stress to be inversely related to social wellbeing. Furthermore, while the quantitative results provided no support for the

hypothesis that Social Support moderates the relationship between work schedule stress and the consequences, the results indicate both Social Support I and Social Support II to be inversely related to work schedule stress. Conceptualising Social Support as a consequence of work schedule stress as opposed to a moderator may indeed suggest that the results may be interpreted as providing support for the hypothesis. Indeed, the finding of an inverse relationship between Social Support I and Social Support II and work schedule stress, may feasibly suggest that work schedule stress leads to lower levels of social support (although low levels of social support may also contribute to higher levels of work schedule stress). It is suggested that the consideration of social support as a possible consequence warrants further investigation.

Considering a more organisational-orientated indicator of wellness, work schedule stress demonstrated a significant relationship with propensity to leave. From the employing organisation's point of view, this is such an immediate and direct consequence that it ought to spur immediate attempts at alleviating some of the more unpleasant aspects of work schedule stress.

No support was found for Hypothesis II, i.e. that the relationship between Work Schedule Stress and health measures is buffered by Potency, Trait Anxiety, Trait Anger,

and Social Support I. Instead, only high correlations between several of these "moderators" and consequences were found.

Potency was selected as a potential moderator on the basis of Ben-Sira's (1985) research. The lack of support for a buffering role of Potency is perhaps in line with Antonovsky's (1987) view about sense of coherence which he defined in a way that reminds of Potency, he rejected the notion that the sense of coherence functions as a buffer between stressors and health, in favour of a view that it is a broader "dispositional orientation" (p.182).

As indicated in Chapter 2, Social Support has been found to play different roles in different situations; findings have also depended on the kind of measure used. The present results on Social Support I are similar to other findings where social support had a main effect on health and work consequences of stress but without playing a buffering role.

Overall, these results are in line with the rather inconclusive evidence regarding buffering effects in general as reported by previous researchers in the field (e.g. Ben-Sira, 1985; House, 1983; La Rocca et al., 1980; Williams & House, 1985). These findings leave the author with three lines of thought which are believed to warrant further

investigation. In the first instance, it is suggested that possibly, given the strong relationship of the moderators to the outcomes as demonstrated in the correlational analysis (as well as the qualitative analysis), that the relationship be accepted as a "main effect" in the case of CAs as opposed to a buffering effect. The personality repertoire of Potency, low levels of Trait Anger and Trait Anxiety and the perception of possessing meaningful social support either directly enhance health or directly decrease levels of Work Schedule Stress of CAs, as opposed to moderate the relationship between Work Schedule Stress and health-related outcomes. While this suggestion essentially goes against La Rocca et al.'s (1980) suggestion of the existence of strong buffering effects for health-related outcomes, it is in line with the generally inconclusive evidence in the field. Certainly, the characteristics of Trait Anger as well as the broader range of health-related outcomes warrant greater attention than afforded in the current research. The suggestion is, however, not conclusive and brings us no closer to answering the questions posed by Williams and House (1985) with regard to the conditions under which we do observe main effects as opposed to buffering effects or even a combination of the two.

This idea leads the author to the second line of thought, i.e. that possibly the measures used in the qualitative analysis require to be refined and the data

reassessed for such effects. More specifically it is suggested on the basis of impressions based on the qualitative analysis, that an attempt should be made to refine such investigations of both causal and moderating effects, by extending the measurement to include either more than one measure of each concept, or various facets thereof. Examples could be sub-components of potency, measures of types, timing and appropriateness of social support; and/or more situational "incidents" as an attempt at assessing under what circumstances the various effects are apparent.

A third thought is that possibly the variables of Potency, Trait Anxiety, Trait Anger and Social Support are not moderators but possibly outcomes of Work Schedule Stress. As suggested earlier in discussing Social Support, there exists an element of support in the literature that social support does not always moderate the influence of stressors. It is suggested that this idea could also apply to the variables of Potency, Trait Anxiety and Trait Anger. The suggestion is regarded as particularly feasible in the case of Trait Anger due to the low and, in fact, insignificant correlational relationship it demonstrated with the other outcomes, while exhibiting a significant relationship with Work Schedule Stress itself. The answers to such suggestions would require further research.

While the research, as conducted, did not provide evidence differing to any great extent from the theoretical base of knowledge outlined in the review of prior research, in the first place, it certainly provided enhanced insight into the complexities of the situation of CAs, the usefulness of which has already been ascertained. In the second place, the results also provided substantial support for the theoretical base outlined earlier, particularly with regard to the consequences of work schedule stress. A few observations integrating this theoretical base with the current findings are appropriate.

In the first instance, occupational stress was outlined and discussed earlier in terms of its potential negative consequence and impact. Williams and House (1985) emphasised this in referring to stress at work and outside of work as one of the major emerging health hazards of the modern industrial world. The current research has, once again, provided strong evidence of the health hazards of organisational stress, as represented by work schedule stress. Indeed the range of consequences outlined in prior research as relevant to shiftwork have been shown to be relevant to the experience of the CA too. These ranged from slight feelings of discomfort, e.g. tiredness, loss of appetite, and social inconvenience, to major medical problems and domestic distress. Certainly the disruption of circadian rhythms emerged as an important consequence in

line with the research as reviewed by Monk and Tepas (1985). Furthermore, social problems emerged as a crucial and negative consequence, in line with the research of Rutenfranz et al. (1977), as did sleep-related disorders. All-in-all the research indicated that while the actual schedule systems of the CAs are fairly unique, the resulting problems experienced do not differ substantially from those generally experienced by shiftworkers.

Considering the work schedule of the CA, it is brought to mind that these involve much more than just 'hours of work'. On the contrary, due to their very nature and noticeable deviation from the norm, a whole lifestyle is involved. Kennedy, in discussing aspects of the life of CAs, in fact, suggested that this is a major hazard for CAs and that people are "dying of their lifestyle" (1986, p.5). Suggestions for both the CAs and the SAA to engage in efforts geared towards enhancing such a lifestyle will be outlined in the next chapter.

To conclude this chapter, it is necessary to briefly and critically assess the current research with regard to relevance, design and contributions to knowledge. In the light of the importance of the job carried out by CAs, it is believed that the relevance and importance of the research has already been established. Questions may arise with regard to the sample size, a mere 108 of whom only 75

returned their questionnaires for statistical analysis. This is a valid concern, although it is suggested that its seriousness is reduced by the fact that the prime focus of the research was on the qualitative interviews and the data so obtained. With regard to generalisability, the research is, however, recognised to be limited due to its small sample size, as well as the sole focus on female domestic crew.

Further criticism may be directed at the study with regard to the methods of data collection and the analyses used. In the first instance, the concerns regarding reliability of qualitative data collection and analysis have been addressed earlier. In the case of the present research it is posed that the combination of qualitative and quantitative techniques, as utilised, is a strength of the study. Considering the statistical techniques utilised, and the fact that the quantitative research design was primarily correlational, certain weaknesses are inherent. Firstly, correlational analysis provides no proof of causation. Investigation of causal relationships would require a different design and/or more specialised statistical techniques to be adopted. Secondly, the technique of subgroup analysis has certain inherent weaknesses. The technique has been used extensively and successfully in general psychological research (Zedeck, 1971) and particularly in organisational stress research (Bluen,

1986). Two inherent, methodological weaknesses have, however, been identified (Bluen, 1978). The technique relies on "arbitrary determined subgroups which increases the probability of obtaining spurious results" (Bluen, 1986, p.207); in addition, certain measurement information is lost in the process of splitting the data into subgroups, so that "the strength of relationships is under-estimated, and the decrease in sample size (necessitated by the subgroup analysis) reduces the power of statistical tests" (Bluen, 1986, p.207). Certainly more sophisticated techniques such as moderated multiple regression, as discussed by Bluen (1986), which overcome these weaknesses of subgroup analysis could enhance the value of the research. It is, therefore, posed that future research in the field be conducted utilising the techniques of moderated regression analysis.

CHAPTER 7

CONCLUSIONS

The present study commenced with discussions with regard to quality of life issues and the documented deficit in quality of life experienced by people working in shifts. The present research has uncovered the major areas of distress experienced by CAs as a consequence of the rather demanding schedules they are required to work and it would seem that CAs experience a deficit in quality of life. The consequences of work schedule stress and subsequent wellness deficits have been emphasised by Hancock, pointing out that: "The failure of flight crew or flight attendants to accomplish specific tasks can have catastrophic consequences, however, such individuals are subjected to many long term stresses and are still expected to perform at 100% efficiency" (1986, p.13). The obvious question that arises is where to from here?

In attempting to answer this question, it is suggested that there is a dual responsibility in attempts to address deficits in wellness, i.e. that of both CAs themselves and the SAA.

Firstly, with regard to the responsibility of the CA, it is believed that the prime responsibility for ensuring an individual's wellness lies with that individual herself.

Kreitner has discussed personal wellness in the context of "it's just good business" (1982, p.28) and pointed out that: "It is time individuals began accepting personal responsibility for taking care of mind and body in a healthful and life sustaining manner ... wellness ... involves constructing a lifestyle that will enable the individual to achieve his or her full physical and mental potential" (1982, p.28). An article by Cornellier supports this in suggesting that "awareness is the key to managing stress" (1984, p1). It is, therefore, suggested that CAs need to take responsibility for themselves and adjust their lifestyles so as to facilitate wellbeing and health and thus prevent themselves from "dying of their lifestyle" (Kennedy, 1986, p.5). Considering the jeopardies of work schedule stress as discussed, required activities would involve planning for eating healthily, getting sufficient rest, exercising, following appropriate beauty routines etc. These activities are suggested as a means of enhancing physical fitness, and by so doing better equipping the CA to withstand the demands of work schedule stress. Furthermore, such "wellness programs" would suggest decreasing or, at best, avoiding smoking, and drinking of alcohol, a habit reported to be high in the life of CAs. It is suggested that the majority of CAs are not currently accepting such responsibility. Such a statement is made on the basis of the fact that many report lifestyles involving minimum sleep as a consequence of factors apart from work schedules.

Furthermore, the analysis provided evidence of wellness increasing with age, a trend rather contrary to expectations, and one which would suggest that older CAs may be assuming a more responsible approach to life and as such facilitating greater wellness. The challenge is thus offered to CAs to manage their lifestyle for wellness.

The SAA too has to address the issues relating to stress, and specifically for present purposes Work Schedule Stress, and its consequences for wellness. It has been discussed at length earlier that the outcome of such consequences can be dysfunctional both to the employee and the organisation itself (Gupta & Beehr 1979). Furthermore, consideration of and attempts to redress such consequences are no longer a matter of mere responsibility but frequently a matter of survival. This is particularly pertinent to the case of the CAs of the SAA, since their jobs involve safety and responsibility for the safety of others. With regard to addressing the work schedule issue, the author believes that the SAA would have to make certain investigations and improvements in two areas, first, in the work schedules themselves and, second, the systems, situations and environment supporting them. The necessity of the SAA also taking up its share is posed in the light of the fact that, no matter what efforts the CAs themselves make, if such are not backed up by SAA's efforts, the efforts of the CAs would be self-defeating.

In the first instance, it is suggested that SAA investigate further the work schedules themselves and the various facets thereof pointed out to be stressful, in an attempt to design systems to overcome at least some aspects of such stresses. This route would possibly involve investigation of alternative schedules and the implications thereof. Cohen and Gadon (1978) pointed out that airlines in America have developed innovative systems for flexible rosters, based on choice and accommodating individual needs and differences. It is posed that investigation of these would be invaluable to the SAA in attempts to address problems of current schedules. It is important to note that it is not being suggested that the schedules lend themselves to being adjusted in such a manner as to get rid of the effects of shiftwork. This is not a feasible task to attempt, as Smith pointed out:

I am not going to argue that one can totally overcome the effects of shiftwork....However, I do believe that some of the negative effects can be reduced. One can make it more possible for shiftworkers to cope. But while the situation can be somewhat improved, the problems of shiftwork are inherent in the nature of having work run over 24 hours (1982, p.10).

It is merely suggested that the work schedules be investigated, with the aim to design the rosters so as to minimise the adverse effects of shiftwork on health and social life. The evidence of the risks of not doing so have been outlined, the challenge to the SAA is to take the proactive approach and attempt to investigate such and design systems to enhance wellness. This is required for the good of both the CAs and the SAA so as to enable them to live up to their slogan of "we make the difference" via ensuring the maintenance of CAs with adequate physical capability and mental agility to competently carry out their duties.

The second aspect of focus believed pertinent for the SAA to investigate is the broader context within which the work schedules take place. These relate to the broader organisational stressors which exacerbate the negative effects of work schedule stress. The most obvious of these is the issue of support at work, essentially managerial support. The current state of affairs of almost total lack of communication between management and CAs, as perceived and reported, indeed have potentially negative consequences for all aspects of organisational effectiveness and is believed to be a crucial issue to address. It is suggested that by solely attempting to address this issue, the SAA will be making moves to solve many of its problems in enhancing the psychological health of its organisation.

Other issues appear mundane by comparison, although it is suggested that this should not lead them to be passed off as insignificant. On the contrary, it is frequently those issues perceived unimportant by others such as management that are important to the individuals concerned. This was shown to be the case when Rutenfranz et al. (1975) pointed out that, while much emphasis is placed on the medical and health consequences of shiftwork, the important ones for individuals are psychosocial ones.

The first issue coming to mind is that of standby. The CAs reported standby duties to represent a major stress as they are required to "sit and do nothing for 8 hours". Many do, however, attempt to fill in such time by studying, reading etc., although the facilities as currently provided generally make these activities difficult. While standby duty may be an important need for the SAA, it is believed that factors such as inadequate facilities merely enhance its stressfulness. It is suggested that the SAA firstly, investigate the standby requirements and, secondly, the environment in which standby duties take place; both effort and capital could possibly be invested to enhance the latter.

To emphasise the point, the author's impressions regarding the "standby-room" warrant sharing as many of

these impressions were confirmed in the interviews by the CAs. A cursory glance at the "standby-room" revealed it to be part of a general room where CAs signed on for duty and received their meal allowances. A walkway divided the room in half and people were constantly coming and going through the room. The tables and chairs were of 'canteen quality', i.e. plastic, straight-backed chairs. The television set was set at a high level so that one would have to look up at it, in fact over the heads of anyone playing snooker. With M-Net available, the set was on at all times and this kept the noise levels fairly high, combined with the public telephones which were in constant use and the constant flow of people reporting for and leaving duty. CAs were not permitted to sleep during standby time and, due to the factors mentioned above, found studying difficult. Consequently, they generally spent the time sitting chatting, playing snooker, knitting or watching TV, activities they reported to find tedious and boring. The ergonomics of the room certainly require to be looked at. A very tentative suggestion would involve separating the TV and snooker table from a quieter lounge or study room where the CAs could engage in quieter activities. A library could perhaps be developed where books of a more sophisticated nature than the paperbacks currently available could be obtained. A further suggestion could involve attempts geared toward utilising the CA's time more effectively, for example possibly having self-study, computer-based training

schemes available that could be left off and picked up again at a later stage, should the CA be "caught out" for a flight; incentives could be developed to encourage completion of such courses. The options are numerous, and warrant investigation. The author is, however, convinced that this represents an opportunity for the management of the SAA to reduce the impact of a stressor, whilst simultaneously enjoying the secondary effect of enhanced morale and motivation.

Like any other organisation, the SAA also has to educate its employees (Monk & Tepas, 1985). Monk and Tepas (1985) suggested that frequently people are not educated as how to cope with night work, for example. They suggested that educational programs which provide information in this respect could be one mechanism in which organisations could minimise the degree to which a workers' domestic health and social factors decline, to the extent that they affect shiftwork productivity. Green (1982) pointed out that the burden of shiftwork can be made lighter with behavioural adaptation, for example with regard to eating, sleeping and recreational patterns. It is believed that the SAA could facilitate wellness by providing the CAs with insight into factors such as the necessity of eating lighter meals at night and decreasing fluid intake in order to cope with hormonal patterns for instance, on the basis that once equipped with such knowledge the CAs could 'plan for

health'. These suggestions imply a workshop to increase awareness of work schedule stress and its management.

Support systems networks would need to exist. For instance, the canteen should be equipped to provide an attractive choice at mealtimes based on the needs of the CAs and also be open around normal "mealtimes" so that those on duty could obtain nutritious meals. The current state of affairs is that the canteen operates strictly according to office-hour needs, closing at 3.30p.m., thus providing no facilities for evening meals for those CAs on duty.

Furthermore, the meals available primarily constitute fast food categories, i.e. pies, hamburgers, hot dogs, sandwiches and rolls, by no means nutritious, balanced meals. The importance of such "tea and toilet" issues should by no means be overlooked, for they are frequently at the root of problems experienced in organisations. Swilling, in fact, raised the question, "Do the diets of your staff members hinder their effectiveness?" and went on to point out that "the foods you eat can make the difference between your day ending with freshness which lets you enjoy a delightful evening or with exhaustion which forces you to bed with the chickens" (1985, p.36).

It is beyond the confines of this dissertation to further explore the options open to both individual CAs and

the SAA with regard to the process of "managing for health". That would in itself constitute a full report. The important message is, however, that both the challenge and opportunity exist for innovative methods to reduce the stress levels and enhance the wellness of CAs, a challenge which is believed so important in the long term that neither party can afford to pass it up.

Future research needs in the field have been suggested throughout the report. It is, however, suggested that while the themes raised as requiring attention in the more theoretical arena may be of relevance and importance, a far greater need lies with the SAA to engage in practical research geared towards explaining the realities and problems experienced by the employees and means of resolving such. As pioneer work in the field in South Africa, the present research is believed to have uncovered some of the more important problem areas experienced by the CAs and merely hinted at tentative solutions. As this study has demonstrated, a vast amount of information can be obtained by interviewing the CAs under conditions of confidentiality. Similarly, many solutions are likely to be forthcoming if they were to be involved seriously in attempts at problem-solving.

In conclusion, it is believed that if the current research achieved only one purpose, i.e. that of

stimulating the interest of the management of SAA in the field and bringing their attention to some of the complexities of the problems, it had achieved its objective.

..... IT'S A MATTER OF TIME

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APPENDIX A

INTERVIEW: CABIN ATTENDANTSINTRODUCTION

Thank person for being willing to talk to you etc. Assure her of confidentiality - no information on her to manager or SAA.

1. Do you ever experience situations where you feel as if you are being put under a lot of pressure (show pressure of hands pushed together) or being pulled or torn from two sides (gesture with arms in opposite directions)? Do you experience what people call "stress" in your job?

(Allow person to speak freely, in her own way, with as little direction as possible. Probe for illustrative experiences - "critical incidents".)

2. Are there any other unpleasant kinds of stressful situations in your work situation?
3. Are there pleasant kinds of experiences in your job, which make you feel good about the job?

4. Relationships with passengers)
)
)
5. Relationships with supervisor(s))
)
)
6. Relationships with manager(s)) All of these areas
) should be touched on,
) in a flexible sequence
7. Relationships with flight deck) and relaxed way. Not
) checklist-like.
)
8. Relationships with other cabin staff)
)
)
9. Demands of equipment)
)
10. Work schedules)
)
11. Do racial differences matter in your work?)
)
12. When passengers' needs or demands clash with SAA rules?
 (Allow to explain freely, then mention examples and ask
 for illustrative experiences.)

Examples:

12.1 SAA expects you to treat all passengers alike but

a passenger may expect to be handled as a special case.

12.2 Passenger may expect you to break SAA rules.

12.3 Do passengers have any control, power over you?

13. When passengers make incompatible demands? (As in 12.)

13.1 Service to more than one passenger at a time.

13.2 Serving a passenger in the presence of others who want something different or different treatment.

13.3 Familiar ("old") passengers vs. strangers.

13.4 Demands of whites vs. blacks or blacks vs. whites.

14. If a new hostess asked you for advice, from your own experience on how she could make life easier for herself, what advice would you give her?

15. Anything you want to add to points you have made?
Anything else that comes to mind?

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Somatic Complaints ($p < .01$), suggesting that CAs with high levels of Potency experience a higher level of General Health and fewer Somatic Complaints than CAs with lower levels of Potency.

Trait Anxiety, correlated significantly at $p < .001$ level with Wellness, General Health, Somatic Complaints and Exhaustion and at $p < .01$ level with Depression. The implication of these results is that CAs exhibiting low levels of Trait Anxiety are likely to enjoy higher degrees of Wellness and General Health, fewer Somatic Complaints and lower levels of Exhaustion and Depression than CAs with higher Trait Anxiety.

Social Support I correlated significantly with Wellness and Somatic Complaints at $p < .001$ level; General Health and Depression at $p < .01$ level; and Exhaustion and Propensity to Leave at $p < .05$ level. The implication is that CAs enjoying perceived high levels of Social Support are likely to enjoy higher degrees of Wellness and General Health, less Somatic Complaints, lower levels of Exhaustion and Depression, and a higher Propensity to Leave than CAs with less perceived Social Support.

Trait Anger demonstrated no significant relationships with any of the consequences except with Exhaustion : $r = -.25$, $p < .05$. Social Support II, i.e. the quantitative

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2-21.

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Self-Description Inventory

Explain about additional information that can be obtained faster by answering questions on paper - show inventory. Request co-operation. Will collect (agree on when). Go through instructions at top of inventory. Help person with Item 80.

Conclusion

Ask the person to discuss the interview as little as possible with colleagues, so as not to influence their answers when it is their turn. Least of all to tell them what she has told you.

Thank her for co-operation.

Reassure her of confidentiality.

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Self-Description Inventory

Explain about additional information that can be obtained faster by answering questions on paper - show inventory. Request co-operation. Will collect (agree on when). Go through instructions at top of inventory. Help person with Item 80.

Conclusion

Ask the person to discuss the interview as little as possible with colleagues, so as not to influence their answers when it is their turn. Least of all to tell them what she has told you.

Thank her for co-operation.

Reassure her of confidentiality.

APPENDIX B

WORK SCHEDULE STRESS SCALEINSTRUCTIONS:

Below is a list of items relating to your work situation and the hours or schedules you are required to work. If an item does not apply to your situation, make an X in the space under "Not Applicable". If it does apply to your situation, make the X in the column which best describes the extent to which it applies, "Seldom", "Sometimes", "Often", or "Always".

SCALE

1	2	3	4	5
NOT APPLICABLE	SELDOM	SOMETIMES	OFTEN	ALWAYS

ITEMS

1. My hours of work make it difficult to interact with my spouse/partner.
2. I get adequate sleep, notwithstanding my work schedules.
3. I feel tired more than other people on account of my

work schedules.

- *4. My family and friends are considerate of my need to sleep at unusual times during non-work periods.
5. I am lonelier than most other people as a result of my work schedules.
6. My work schedules leave me irritable.
7. My work schedules allow me the freedom to lead a lifestyle compatible with those people who are important to me.
8. My work schedules allow me to be a good companion to my spouse/partner.
9. My work schedules enable me to plan events outside of my working life.
- *10. I feel more tired when I am away than when at home.
- *11. I feel anxious about contact with my superiors during non-working hours.
12. I feel the need for time off apart from that provided for in my work schedules.

13. I feel rested with the amount of sleep that my work schedules allow me.
14. My work schedules are bad for my health.
15. My work schedules leave me feeling isolated from friends who work and live on ordinary schedules.
16. My work schedules leave me feeling as if I am missing something or need to catch up.
17. I am able to catch up on lost sleep during non-working hours.
18. I get so tired I find it hard to do my work.
19. My work schedules interfere with my intimate relationship with my spouse/partner.
20. Household and domestic arrangements allow me to catch up on lost sleep.
- *21. My work schedules leave me so exhausted that I cannot perform the task at hand.
22. I have many friends and close relationships,

notwithstanding the demands of my job.

23. I feel more tired while in the aircraft than during "rest" periods.
- *24. I take time off as "sick" for important events such as birthday parties or dental appointments.
- *25. Tablets sometimes seem like a quick fix to me.
26. As it is now, the schedule system prevents me from developing ongoing relationships with my colleagues on flights.
27. My sleep patterns during non-work hours are disrupted by external influence beyond my control.
28. My work schedules cause me depression.
29. My work schedules allow me to give my spouse/partner all the care I would like.
30. My work schedules leave me feeling isolated from friends.
- *31. Tablets are a part of everyday life.

- *32. My work schedules facilitate ongoing contact and communication with my superiors when required.
- 33. My work schedules allow me to participate in out-of-work activities and organisations at my leisure.
- 34. My work schedules disrupt my family life.
- 35. I have lost the normal rhythm of life I used to have.
- 36. My work schedules allow me to form permanent, meaningful bonds with people.
- 37. I have a general feeling of well-being and strength in spite of my work schedules.
- 38. I have difficulty sleeping during the day-time even when the room is darkened.
- 39. I can still lead a normal life even though society is orientated to the daytime.
- 40. I have been bothered by an upset stomach due to my work schedules.

NOTE: Items marked with an * were deleted from the final scale on the basis of the Item Analysis results.

SCORING: Add numbers marked for each item, reversing scores for items 2, 7, 8, 9, 13, 17, 20, 22, 29, 33, 36, 37 and 39 to obtain a single total score. (Min score = 32; max score = 160).

APPENDIX C

SELF-DESCRIPTION INVENTORYINSTRUCTIONS

There are no "right" or "wrong" answers in this inventory. Only your own experiences matter. Please complete it as honestly as you can. Don't leave out any questions.

For each question or statement below, choose one of the answers or alternatives provided, then circle the number above it. Here and there you have to fill in a number.

Don't spend too much time on any item, work fast and give your first impression.

1. How often does your job require you to work very fast?

5	4	3	2	1	0
Very	Fairly	Some-	Occasion-	Rarely	Never
Often	Often	times	ally		

2. How often does your job require you to work very hard?

5	4	3	2	1	0
Very	Fairly	Some-	Occasion-	Rarely	Never
Often	Often	times	ally		

3. How often does your job leave you little time to get things done?

5	4	3	2	1	0
Very Often	Fairly Often	Some-times	Occasion-ally	Rarely	Never

4. How often is there a great deal to be done?

5	4	3	2	1	0
Very Often	Fairly Often	Some-times	Occasion-ally	Rarely	Never

5. I have little control over things that happen to me.

1	2	3	4	5	6
Agree very strongly	Agree quite strongly	Just Agree	Just Dis-agree	Disagree quite strongly	Disagree very strongly

6. I feel that I am being pushed around in life.

1	2	3	4	5	6
Agree very strongly	Agree quite strongly	Just Agree	Just Dis-agree	Disagree quite strongly	Disagree very strongly

7. I can do about anything I set my mind to.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

8. I often feel helpless in dealing with the problems of life.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

9. What happens to me in the future mostly depends upon me.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

10. There is really no way I can solve some of the problems I have.

1	2	3	4	5	6
---	---	---	---	---	---

Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

11. I certainly feel useless at times.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

12. All in all, I am inclined to feel that I am a failure.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

13. I am able to do things as well as most other people.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

14. Nowadays a person has to live pretty much for today and let tomorrow take care of itself.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

15. In spite of what some people say, the lot of the average man is getting worse and not better.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

16. It is hardly fair to bring children into the world with the way things look for the future.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

17. Which political group one supports is more important than talent for achieving something in this society.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree

very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

18. Having the right connections is more important than talent for achieving something.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

19. Community leaders are indifferent to one's needs.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

20. Little can be accomplished in this society because it is basically unpredictable and lacking order.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

21. Life goals are moving farther away, rather than being

realized.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

22. Life is futile.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

23. Nowadays one cannot count even on closest personal association for support.

1	2	3	4	5	6
Agree	Agree	Just	Just	Disagree	Disagree
very	quite	Agree	Dis-	quite	very
strongly	strongly		agree	strongly	strongly

24. If you smoke, how much do you smoke?

(If you don't smoke write 0)

I smoke _____ cigarettes per day.

25. About how often did you drink the last month - how many

days out of 30? _____ days

26. When you drink, about how many glasses of beer or wine or tots of hard liquor do you have in one day?

_____ drinks

27. About how often in the past month did you find it necessary to take some tablets or other drug to help you go to sleep - how many days out of 30?

_____ days

28. About how often did you find it necessary to take tranquilisers in the past month - how many days out of 30?

_____ days

29. If you were completely free to choose, would you prefer to continue working for this company?

1	2	3
No	Not Sure	Yes

30. How long would you like to stay with this company?

1	2	3	4	5	6
1 year	2 years	3 years	5 years	10 years	more than 10 years

31. If you had to leave work for a while (for example, because of a pregnancy or some other important reason), would you return to this company?

1	2	3
No	Not sure	Yes

32. "I find it very difficult to get up and going in the morning", describes me.

5	4	3	2	1
Very Well	Fairly Well	Somewhat	Not Really	Not at All

33. "At the end of the day I am completely exhausted, mentally and physically" describes me

5	4	3	2	1
Very Well	Fairly Well	Somewhat	Not Really	Not at All

34. "I feel burned out by the demands of my job", describes me.

5	4	3	2	1
Very Well	Fairly Well	Somewhat	Not Really	Not at All

35. "I am continually tired during the day", describes me:

5 4 3 2 1
 Very Well Fairly Well Somewhat Not Really Not at All

36. How much do you take part with others in making decisions that affect you?

5 4 3 2 1
 A great A lot Some A little Very little
 deal

37. How much do you participate with others in helping set the way things are done on your job?

5 4 3 2 1
 A great A lot Some A little Very little
 deal

38. How much do you decide with others what part of a task you will do?

5 4 3 2 1
 A great A lot Some A little Very little
 deal

39. How many close relatives and close friends do you have -

people you can feel at ease with, can talk to about private matters, and can call on for help? Please count carefully and write down the number.

_____ persons

For items 40 to 49, underline the answer which describes best how your life is. Complete the sentence my life is ...

40. boring vs. interesting
41. enjoyable vs. miserable
42. easy vs. hard
43. useless vs. worthwhile
44. friendly vs lonely
45. full vs. empty
46. discouraging vs. hopeful
47. tied down vs. free
48. disappointing vs. rewarding
49. brings out best vs. doesn't bring out best.

For items 50 to 57: Have you experienced any of the following during the past month on the job? Make an X in front of those you have experienced during the past month:

50. _____ Your hands trembled enough to bother you.
51. _____ You were bothered by shortness of breath when you were not working hard or exercising.

52. _____ You were bothered by your heart beating hard.
53. _____ Your hands sweated so that you felt damp and clammy.
54. _____ You had spells of dizziness.
55. _____ You were bothered by having an upset stomach or stomach ache.
56. _____ You were bothered by your heart beating faster than usual.
57. _____ You were in ill health which affected your work.

In addition, did you experience either one of the following during the past month:

58. You had a loss of appetite.

0	1	2
Never	One or Twice	Three or more times

59. You had trouble sleeping at night.

0	1	2
Never	Once or Twice	Three or more times

Items 60 to 79 contain statements that people have used to describe themselves. For each statement, circle the number of the answer which indicates how you generally feel.

60. I am a steady person.

4	3	2	1		
Almost	Always	Often	Sometimes	Almost	Never

61. I am quick tempered.

4	3	2	1		
Almost	Always	Often	Sometimes	Almost	Never

62. I feel satisfied with myself.

4	3	2	1		
Almost	Always	Often	Sometimes	Almost	Never

63. I have a fiery temper.

4	3	2	1		
Almost	Always	Often	Sometimes	Almost	Never

64. I feel nervous and restless.

4 3 2 1
Almost Always Often Sometimes Almost Never

65. I am a hotheaded person.

4 3 2 1
Almost Always Often Sometimes Almost Never

66. I wish I could be as happy as others seem to be.

4 3 2 1
Almost Always Often Sometimes Almost Never

67. I get angry when I'm slowed down by others' mistakes.

4 3 2 1
Almost Always Often Sometimes Almost Never

68. I feel like a failure.

4 3 2 1
Almost Always Often Sometimes Almost Never

69. I feel annoyed when I am not given recognition for doing good work.

4 3 2 1
 Almost Always Often Sometimes Almost Never

70. I get in a state of tension or turmoil as I think over my recent concerns and interests.

4 3 2 1
 Almost Always Often Sometimes Almost Never

71. I fly off the handle.

4 3 2 1
 Almost Always Often Sometimes Almost Never

72. I feel secure.

4 3 2 1
 Almost Always Often Sometimes Almost Never

73. When I get angry, I say nasty things.

4 3 2 1
 Almost Always Often Sometimes Almost Never

74. I lack self-confidence.

4 3 2 1
 Almost Always Often Sometimes Almost Never

75. It makes me furious when I am criticised in front of others.

4	3	2	1
Almost Always	Often	Sometimes	Almost Never

76. I feel inadequate.

4	3	2	1
Almost Always	Often	Sometimes	Almost Never

77. When I get frustrated, I feel like hitting someone.

4	3	2	1
Almost Always	Often	Sometimes	Almost Never

78. I worry too much over something that really does not matter.

4	3	2	1
Almost Always	Often	Sometimes	Almost Never

79. I feel infuriated when I do a good job and get a poor evaluation.

APPENDIX DSELF-DESCRIPTION INVENTORYSCALES, SOURCES AND SCORING1. Work Load

Items 1-4

Source: Caplan et al., 1980, p.238.Scoring: Sum of ratings circled.2. Potency

Items 5-23. Items 17(13) and 21(17) changed slightly.

Source: Ben-Sira, 1985, pp.405-406; p.400 for scoring categories.Scoring: Sum ratings circled. (Scoring direction for "right" items -3, 5 and 9 in original listing was reversed from 1-6 to 6-1.)3. Smoking

Item 24

Scoring: Actual count, i.e. 0 to highest number.4. Drinking

Items 25, 26

Source: Kessler et al., 1987, p.58.Scoring: Product of answers to 25 and 26.5. Pill Consumption

Items 27, 28

Source: 27 adapted from Kessler et al., 1987,

p.58.

28 from Kessler et al., 1987, p.58.

(Also compare Karasek, 1979, p.307, 308).

Scoring: Sum of 27 and 28.

6. Propensity to Leave

Items 29-31

Source: Lyons, 1971, p.103. Wording adapted:

"hospital" to "company".

Scoring also changed to follow Bluen,
1986, p.156 and 352.

Scoring: Sum of values.

7. Exhaustion

Items 32-35

Source: Adapted from or suggested by various sources,
including Karasek, 1979, p.307.

Scoring: Sum of values.

8. Participation

Items 36-38

Source: Caplan et al., 1980, p.250.

Scoring: Sum of values.

9. Social Support II

Item 39.

Source: Aneshensel & Stone, 1982, p.1393. (Item
added to.)

Scoring: Number.

10. Depression

Items 40-49

Source: Karasek, 1979, p.307.

Scoring: Negative items count 1 each.

First term negative for Items 40, 43,
46, 47, 48.

Second term negative for Items 41, 42,
44, 45, 49.

11. Somatic Complaints

Items 50-59.

Source: Caplan et al., 1980, p.271, 272.

Scoring: Count number for Items 50-57, add numbers
indicated for Items 58 and 59.

12. Trait Anxiety

Items 60, 62, 64, 66, 68, 70, 72, 74, 76, 78.

Source: Spielberger et al., 1980, p.4.

Scoring: Direction has been reversed for items 60,
62 and 72 (31, 34, 49).

Sum values circled.

13. Trait Anger

Items 61, 63, 65, 67, 69, 71, 73, 75, 77, 79.

Source: Spielberger et al., 1980, p.4 (Item 73
reworded: "angry" rather than "mad".)

Scoring: Sum values circled.

14. Rating of General Health

Item 80

Source: Garrity, Somes and Marx, 1978, p.78.

Scoring: Number circled.

APPENDIX ESCALES CONSTRUCTED FROM QUALITATIVE DATA

SOCIAL SUPPORT I

Instructions:

For each item, rate on four point scale level of support perceived as being received and/or most appropriate rating for individual concerned.

Scale:

1	2	3	4
None	Little	Fair Amount	High

Items:

1. Management
2. Supervisors
3. Spouse/partner
4. Co-workers
5. Friends

Scoring:

Sum of scores. Minimum: 7 Maximum: 20

WELLNESS

Instructions:

For each item, rate on the four point scale which score best describes the individual with regards the alternative statement.

Items:

- | | |
|------------------|-------------------------------|
| 1. Existing from | Perception of living healthy |
| moment to moment | lifestyle - exercising/eating |

patterns etc.

- | | |
|---|--|
| 2. Inadequate sleep/
feeling of tired-
ness, lethargy | Adequate sleep/feeling of
being rested/restored |
| 3. No form of recreation
or hobbies | Exercise/hobbies |
| 4. Worthless/inadequacy | Perception of leading meaningful/
quality life |

Scoring:

Sum of ratings circled. Minimum: 4 Maximum: 16

APPENDIX FMAJOR STRESSORS REPORTED TO BE EXPERIENCED
IN WORK OF AIR CABIN ATTENDANTS

(Note: The order listed is incidental and by no means indicates order of importance.)

- * Work Schedules / Hours of Work
- * Passengers
 - can be demanding
 - keeping "smile on face" and issue of subordinate service role stress
- * Delays
 - passengers get irate - increasingly demanding / take out on CA.
 - frequently relates to increasing pressure against time
 - extends hours of work
- * Colleagues
 - working in such close quarters can be demanding, e.g. flying with people you don't get along with.
- * The System
 - bureaucracy, rigid, "government orientated".
 - perceived lack of support thereof, i.e. "if you don't like it, leave".
 - unexplained inequities e.g. promises of overseas

flights never fulfilled.

* Frequent Race / Pressure Against Time

- delays / boarding, no time for preparation
- short haul 'service' flights

* Safety

- Potential dangers - "dormant worry"
- Helderberg

* Physically Demanding Job

- can be exhausting, tiring
- lack of mental stimulation

* Social Life / Social Support

- work-related difficulties thereof

* Perception of being 'hooked into' the system

- initially joined for "travel", to see the world etc. - planned for approximately two years - but now "hooked in" - no alternatives

* The Equipment

- generally perceived in negative light - being in less than satisfactory condition ... an additional demand, stressor

APPENDIX GANOMALIES CONFRONTED IN WORK
OF CABIN ATTENDANT

(Note: The order listed by no means indicates the degree of priority)

- * Physical work - not mentally stimulating / no future career paths, yet CAs are all highly qualified
- * CAs required to be physically perfectly groomed, maintain professional ethics, yet the equipment is tacky / in state of bad repair, also heavy etc.
- * Race against time: SAA expect personalised service to customers, yet time pressures do not allow this.
- * SAA expect personalised service of customers yet CAs are subject to impersonalised treatment, as 'numbers', regimented in uniforms etc.
- * Professional service expected yet CAs are told not to cope or deal with problems but to call the senior who is "more qualified".
- * Perception of job as glamorous, yet not, "glorified waitresses."
- * Management bureaucratic, rigid, yet expect CAs to be flexible - 'on call' (work schedules) and flexible with passengers.
- * Expected to be bright / beautiful / physically perfect,

yet no leeway for individual sleep needs, no support or
direction given for proper eating habits / get
leftovers / on standby, canteen facilities are inadequate

- * Lifestyle - enjoy free time, non-routine etc. yet feel
'out of synch' with society.